



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
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# YOUNG ADULTS IN THE WORKPLACE (YIW) LITERATURE REVIEW ANNOTATED REFERENCE LIST

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**Adelman, H.S., and L. Taylor. 2003. "Creating School and Community Partnerships for Substance Abuse Prevention Programs." *Journal of Primary Prevention* 23(3):329-369.**

This article reviews the scope and scale of the problem, explores a transactional view of etiology, and summarizes the prevailing approaches to prevention, exemplary and promising approaches, and standards for research and practice. The authors stress the importance of addressing the complexity of the problem through creation of comprehensive, multifaceted approaches to reduce substance abuse. Effective intervention frameworks are presented that weave together the resources of school, home, and community.

**Ames, G.M., and J.W. Grube. 1999. "Alcohol Availability and Workplace Drinking: Mixed Method Analyses." *Journal of Studies on Alcohol* 60(3):383-393.**

This article investigates the relationship between subjective social and physical availability of alcohol at work and work-related drinking. The authors integrated survey and ethnographic methods to determine if and why physical and social availability of alcohol predicted work-related drinking in a manufacturing plant with approximately 6,000 employees. Survey data were obtained from in-home interviews with 984 randomly selected workers. Respondents were asked about their overall and work-related drinking, their perceptions of the ease of obtaining or consuming alcohol in the plant, the work-related drinking of others, and their approval/disapproval of work-related drinking by coworkers. Ethnographic data were obtained from 3 years of periodic onsite observations and semistructured interviews with key informants to investigate factors underlying alcohol availability and drinking at work. Structural equations modeling of the survey data revealed that subjective social availability of alcohol at work, and particularly perceived drinking by friends and coworkers, was the strongest predictor of work-related drinking. Typical frequency and quantity of alcohol consumption and heavy drinking were also predictive. Subjective physical availability of alcohol was not significantly related to drinking at or before work. Findings from the ethnographic analyses explained survey findings and described characteristics of the work culture that served to encourage and support alcohol availability and drinking. These results are the first to show significant relationships between alcohol availability and drinking at work, to explain dynamics of that relationship, and to demonstrate the potential risks of using only quantitative or only qualitative findings as the basis for prevention.

**Ames, G.M., and C. Janes. 1992. "A Cultural Approach to Conceptualizing Alcohol and the Workplace." *Alcohol Health and Research World* 16(2):112-119.**

The authors identify four cultural dimensions that affect alcohol use in the workplace: normative regulation of drinking, quality and organization of work, factors external to the workplace, and drinking subcultures at work. The most influential aspect of workplace culture when it comes to drinking is normative rules that govern alcohol consumption. These include written company policies as well as unspoken cultural norms (e.g., martini lunches, social drinking at company functions). Often, these tacit norms are a powerful social force, with inclusion or exclusion from a group hinging on the decision to join the group for a drink. Several aspects of type and organization of work have been shown to influence alcohol consumption. Work situations that are unstructured, inflexible, highly stressful, or make workers feel powerless or alienated have

been shown to promote problem drinking. Factors external to work—religiosity, commitment to community organizations, strong family bonds—can influence workers to either join or shun drinking groups at work. A history of family drinking may induce a worker to seek out a workplace where drinking is a prominent feature of the cultural milieu. Strong commitment to family might also cause workers to absent themselves from carousing after work. In drinking subcultures, alcohol consumption is seen not as a problem behavior but as a means of communication that signifies solidarity, masculinity, job identity, and group values.

**Ames, G.M., J.W. Grube, and R.S. Moore. 2000. "Social Control and Workplace Drinking Norms: A Comparison of Two Organizational Cultures." *Journal of Studies on Alcohol* 61(2):203-219.**

This article reports on an investigation of the relationship of social control mechanisms at work to drinking practices of 10,000 salaried and hourly employees working in the same U.S. industry, with the same union, but in two different work environments. One work environment reflected an organizational culture that is traditional to U.S. management; the other was based on a nontraditional Japanese transplant model. The research team used a combination of methods including in-home surveys (N = 1,723; 1,378 men) and ethnography (110 semistructured interviews and 200 hours of direct observation inside the plants). Respondents were asked about general and work-related drinking, perceptions of drinking norms, strengths or weaknesses of alcohol-related policies, and procedures for policy enforcement. Although overall consumption rates in both populations were similar, significant differences between the two samples existed regarding work-related drinking. The traditional (i.e., U.S.) model was associated with more permissive norms regarding drinking before or during work shifts (including breaks) and higher workplace drinking rates than the transplant (i.e., Japanese) model. Analyses revealed that alcohol policies, and the extent to which policies are actually enforced, predicted drinking norms and alcohol availability at work. Drinking norms, in turn, predicted work-related drinking and accounted for differences in alcohol consumption between the two worksites. Analyses of ethnographic data provided descriptive understandings of aspects of the two organizational cultures that disabled mechanisms for social control of drinking in one setting and enabled those mechanisms in the other. These understandings of how social control mechanisms predict work-related drinking practices provide guidelines for alcohol problem prevention in a specific kind of occupational environment. However, the identification of aspects of social control that successfully regulate workplace drinking is applicable to other kinds of occupational settings as well.

**Anderson, B.K., and M.E. Larimer. 2002. "Problem Drinking and the Workplace: An Individualized Approach to Prevention." *Psychology of Addictive Behaviors* 16(3):243-251.**

The present study evaluated the efficacy of a brief, individualized, alcohol abuse prevention program designed to reduce problem drinking within the workplace environment. One hundred fifty-five randomly selected employees of a medium-sized company in the food and retail services sector participated in a 6-month controlled worksite prevention trial. Female problem drinkers who received the intervention were more likely than those in the no-treatment control group to reduce alcohol-related negative consequences at follow-up. In addition, there was a significant multivariate treatment effect, suggesting that participants who received the

intervention were significantly more likely to reduce drinking frequency at follow-up. Evaluation of attrition rates and reports of participant satisfaction suggest that the intervention was effective in engaging participants at all levels of alcohol consumption.

**Arnett, J.J. 2000. "Emerging Adulthood: A Theory of Development from the Late Teens Through the Twenties." *American Psychologist* 55(5):469-480.**

Emerging adulthood is proposed as a new conception of development for the period from the late teens through the twenties, with a focus on ages 18 to 25. A theoretical background is presented, and evidence is then provided to support the idea that emerging adulthood is a distinct period demographically, subjectively, and in terms of identity explorations. How emerging adulthood differs from adolescence and young adulthood is explained. Finally, the authors outline a cultural context for the idea of emerging adulthood and specify that emerging adulthood exists only in cultures that allow young people a prolonged period of independent role exploration during the late teens and twenties.

**Bachman, J.G., and J. Schulenberg. 1993. "How Part-Time Work Intensity Relates to Drug Use, Problem Behavior, Time Use, and Satisfaction among High School Seniors: Are These Consequences or Merely Correlates?" *Developmental Psychology* 29(2):220-235.**

The authors related work intensity (hours worked per week) to indicators of psychosocial functioning and adjustment by using nationally representative samples of high school seniors, totaling 70,000+ respondents, from the classes of 1985 to 1989. Consistent with previous research, positive correlations were found between work intensity and problem behaviors, such as smoking cigarettes, drinking alcohol, using illicit substances, theft, and trouble with police; these associations were diminished (but not eliminated) once background and educational success indicators were controlled for, suggesting that selection of factors contribute to the correlations. Work intensity appears to reduce the likelihood of getting sufficient sleep, eating breakfast, exercising, and having a satisfactory amount of leisure time. The authors discuss conceptual and policy implications, including the possibility that long hours of part-time work may be both a symptom and a facilitator of psychosocial difficulties.

**Bachman, J.G., L.D. Johnston, P.M. O'Malley, and J. Schulenberg. 1996. "Transitions in Drug Use During Late Adolescence and Young Adulthood." In *Transitions Through Adolescence: Interpersonal Domains and Context*, J.A. Graber, J. Brooks-Gunn, and A.C. Petersen, eds., pp. 111-140.**

This chapter uses data from Monitoring the Future to examine substance use trends in late adolescence and early adulthood. The authors describe the transition to young adulthood as a time of change but also of stability. Young people leave high school and enter college or the workforce, but many still live at home and employ the same coping mechanisms they used in high school. The authors see young adulthood as a time of increasing freedom with parental controls lifted but also as a time of increasing limitations with adult responsibilities descending. Trends in substance use are similar across substances. Use of alcohol, cocaine, and tobacco goes up after high school, although the reasons for the increases differ by substance (marijuana does not show a comparable increase). The authors caution that not all trends in adolescent substance use are attributable to the age of the users. Historical and cultural factors often

explain use data better than factors related to age. For example, use of a certain drug drops when the perceived risk increases. The authors theorize that drops in adolescent cocaine use in the 1980s can be attributed to the credence lent to anti-drug messages by the cocaine-related deaths of several high-profile athletes. Trends in adolescent drug use can also be attributed to a general tendency toward deviance in some adolescents. As drug use becomes more and less attractive, it becomes more or less frequently an expression of the adolescent impulse for deviance. Researchers have long known that, across all ages, the best predictor of future substance use is past substance use. The authors argue that a young person's social environment contributes most heavily to the decision to use substances. This susceptibility does not change as the youth moves from adolescence to young adulthood; peer attitudes and pressures remain influential. Finally, the authors assert that what appears to be an age-linked increase in substance use after high school may be explained by living arrangements that remove barriers to substance use. So, the increased substance use seen in college students and young adults who move away from home has less to do with an age-linked transition or the influence of college or employment than it does with a new living arrangement conducive to substance use. The same increases in substance use are not seen if young adults are in different living arrangements. For example, when young adults marry or become parents, their use of substances (except for tobacco) tends to drop. The authors close by suggesting that real change in young people's attitudes toward substance use is possible, citing a process in which the dangers of drugs are studied, reported, included in youth-oriented programming, and incorporated into young people's thinking, all within a few years' time. Realistic information about the risks of substance use will have more effect on rates of use among adolescents and young adults than scare tactics.

**Backer, T.E., and K.B. O'Hara. 1991. *Organizational Change and Drug-Free Workplaces: Templates for Success*. New York: Quorum Books.**

This book focuses on management styles and behaviors in addressing substance use in the workplace; its intended audience is human resources managers, benefits coordinators, and middle managers. Rather than prescribe solutions—a tactic that would belie the complexity of the problem—the authors provide templates or ways of approaching substance use in the workplace. They also report results from surveys of how companies deal with substance use, assembling a snapshot of organizations' approaches to the problem. The templates are applied to various companies' approaches to demonstrate successes and failures. The authors assert that we can speak of "addictive" workplaces in the same way we talk about addicted people. Organizations fail when they try to address substance abuse for the same reasons that individuals fail: they evade the complexity of the problem and they look for quick fixes. These are problems that beset management in general—failing to examine root causes and putting out fires instead of preventing them—but these problems are magnified when a crisis becomes acute, as drugs in the workplace did in the mid-1980s. The authors adopt an organizational change perspective, examining why and how companies fail to adapt. Two of the main reasons are implementation failure (a new idea is attempted but not followed through on, often because inadequate resources are devoted to sustaining it) and information overload (the organization never gets to the implementation stage because the amount and complexity of information is paralyzing). While EAPs represent the primary organizational response to substance abuse in the workplace, objections to them are not uncommon. They are costly (especially to small

employers) and their benefits (productivity not lost, lawsuits not filed) are often hard to quantify. There is also the uncomfortable fact that most people who use an EAP do not remain abstinent and many employees get sober without ever using EAP services. Without better information about how EAPs succeed, including detailed cost-benefit analyses, it will be difficult to improve existing EAPs and convince companies that do not have EAPs to initiate them. The authors see little benefit in journal articles and conferences; they call for information and studies that can be put to use by managers in workplaces. One of the themes of the book is that change is disruptive but necessary. Companies can minimize the disruption caused by implementing an EAP if they work to integrate the EAP fully into the management structure. Collaboration among human resources, benefits, upper management, and the EAP is essential to overcoming the barriers to EAPs and to helping workers with substance use problems.

**Barlieb, D., V. Liberto, and J. Roberts. 2000. "Integrating a Solution-Focused Model into SAPs." *Student Assistance Journal* (Fall).**

Student assistance programs (SAPs) aim to identify troubled students and connect them with services in the school and the community. SAPs perform six functions: early identification of problems, such as substance use, assessment, intervention, referral, support, and case management. A solutions-focused approach (also known as a competency-based approach) can be incorporated into each of these functions. The competency-based model seeks solutions to problems by identifying and building on students' strengths, rather than focusing on deficits and limitations. Health and progress are emphasized over pathology and delinquency. Because no problem is *always* present, students can be coached to recognize exceptions to problem behaviors and identify the resources they use to bring about and maintain those exceptions. A solutions-focused approach is committed to the idea that small changes are possible and that small changes precede larger changes. To transform a problem-focused SAP into a competency-based SAP, counselors and team members must reconfigure the way data are collected and organized. Eliciting student strengths along with a description of their problems is an essential first step. This article provides a series of questions that can shape data collection and help integrate a solutions-focused approach.

**Bass, A.R., R. Bharucha-Reid, K. Delaplane-Harris, M.A. Schork, R. Kaufmann, D. McCann, B. Foxman, W. Fraser, and S. Cook. 1996. "Employee Drug Use, Demographic Characteristics, Work Reactions, and Absenteeism." *Journal of Occupational Health Psychology* 1(1):92-99.**

Employees in a large work organization participated in an investigation of relationships between drug use and absenteeism and tardiness. Specifically, the study investigated the extent to which both self-reported and urine-screened drug use accounted for variance in several types of absenteeism, as well as tardiness, above and beyond that accounted for by demographic and work reaction variables. The results showed that employee drug use accounted for additional statistically significant variance in overall absenteeism and in absenteeism due to injuries and suspensions, as well as days tardy. Implications of these findings for organizational drug testing are discussed.

**Bauman, A., and P. Phongsavan. 1999. "Epidemiology of Substance Use in Adolescence: Prevalence, Trends and Policy Implications." *Drug and Alcohol Dependence* 55(3):187-207.**

The authors reviewed the epidemiology of substance use among adolescents. There is a public health imperative in all countries to assess the prevalence rates of tobacco, alcohol, and illicit drug use among adolescents. In addition, monitoring trends over time may reflect the net effects of activities and programs carried out to prevent adolescent substance use. School-based surveys provide prevalence estimates of substance use but do not capture street and homeless youth and other high-risk adolescents not found in the school environment. Overall, the results of this review suggest that tobacco, hazardous alcohol use, and most categories of illicit drug use have shown consistent increases in prevalence since about 1990 in most developed countries, for school-based adolescents, suggesting that the substance use problem among adolescents remains unsolved. These trends are remarkably similar across substance use behaviors, and among most developed countries, although limited data have emanated from adolescents in the developing world. Interventions to reduce or prevent substance use have shown mixed results, with those focusing on the adolescents' social environment showing the most promise. The authors conclude that broader public health approaches, including the linkage to community-wide prevention, and greater enforcement or regulatory and legislative approaches to tobacco and alcohol access are future directions for research and practice.

**Bauman, K.E., and S.T. Ennett. 1996. "On the Importance of Peer Influence for Adolescent Drug Use: Commonly Neglected Considerations." *Addiction* 91(2):185-198.**

Peer influence is generally believed to be a major cause of adolescent drug behavior. The authors reviewed research findings on friend selection and projection to suggest that the magnitude of friend influence may be overestimated. The authors also observed that, although adolescent drug use is assumed to begin in response to peer group influence, peer groups have rarely been measured in studies of drug behavior. Social network analysis is identified as a promising method for measuring peer groups. The authors conclude by considering the implications of this review for research and programs.

**Bauman, K.E., V.A. Foshee, and S.T. Ennett. 2001. "Family Matters: A Family-Directed Program Designed to Prevent Adolescent Tobacco and Alcohol Use." *Health Promotion Practice* 2(1):81-96.**

The authors described a program for families that is intended to reduce adolescent tobacco and alcohol use. The program, featuring mailed booklets and follow-up telephone contacts by health educators, was directed toward general populations and was evaluated with a randomized experiment involving families throughout the contiguous United States. Considerations included description of the principles that influenced program features, the conceptual model for the program, the formative research conducted to design the program, the attributes of the final program as implemented nationally for 658 families, parent assessments of the program, program costs, and the evaluation design.

**Bauman, K.E., S.T. Ennett, V.A. Foshee, M. Pemberton, and K. Hicks. 2001. "Correlates of Participation in a Family-Directed Tobacco and Alcohol Prevention Program for Adolescents." *Health Education & Behavior* 28(4):440-461.**

The authors examined correlates of program initiation and completion in a family-directed program that involved families of adolescents throughout the United States. Correlates varied by whether program initiation, program completion, or the number of activities completed was the indicator of participation. In final regression models, participation was relatively likely by non-Hispanic Whites when compared with persons of race/ethnicity other than White, Black, and Hispanic; by families with a female adolescent as the program recipient; by families with mothers who had many years of education; and by families with both parents living in the household. There was more participation if parents thought their child would smoke in the future and if the parent thought their child did not smoke currently. Participation was higher if the adolescent felt strongly attached to the parent and if parents did not smoke. The authors consider the findings in the context of similar programs and future research on family-directed programs to prevent adolescent tobacco and alcohol use.

**Bauman, K.E., V.A. Foshee, S.T. Ennett, M. Pemberton, K.A. Hicks, T.S. King, and G.G. Koch. 2001. "The Influence of a Family Program on Adolescent Tobacco and Alcohol Use." *American Journal of Public Health* 91(4):604-610.**

The authors examined a family-directed program's effectiveness in preventing adolescent tobacco and alcohol use in a general population. To do so, they identified adolescents aged 12 to 14 years and their families using random-digit-dialing throughout the contiguous United States. After providing baseline data by telephone interviews, they were randomly allocated to receive or not receive a family-directed program featuring mailed booklets and telephone contacts by health educators. Follow-up telephone interviews were conducted 3 and 12 months after program completion. Findings suggested that smoking onset was reduced by 16.4 percent at 1 year, with a 25.0 percent reduction for non-Hispanic Whites but no statistically significant program effect for other races/ethnicities. There were no statistically significant program effects for smokeless tobacco or alcohol use onset. The authors concluded that the family-directed program was associated with reduced smoking onset for non-Hispanic Whites, suggesting that it is worthy of further application, development, and evaluation.

**Bauman, K.E., S.T. Ennett, V.A. Foshee, M. Pemberton, T.S. King, and G.G. Koch. 2000. "Influence of a Family-Directed Program on Adolescent Cigarette and Alcohol Cessation." *Prevention Science* 1(4):227-237.**

Programs to reduce adolescent cigarette or alcohol use by users in general populations have only recently been evaluated. Moreover, the authors state that in spite of the substantial influence families have on their children, few family-directed programs designed to reduce the prevalence of adolescent smoking and drinking have been rigorously evaluated. The authors reported the findings of research designed to determine whether a family program reduced cigarette or alcohol use by users. The program consisted of a series of booklets mailed to families and follow-up telephone calls by health educators. A randomized experimental design involved families with children aged 12 to 14 years throughout the United States. Data were collected by telephone at baseline and 3 and 12 months after the program was completed. No

statistically significant program effects were observed for cessation or decrease in smoking and drinking by users.

**Bell, S.N., T.W. Mangione, J. Howland, S. Levine, and B. Amick III. 1996. "Worksite Barriers to the Effective Management of Alcohol Problems." *Journal of Occupational and Environmental Medicine* 38(12):1213-1219.**

The purpose of this analysis is to describe barriers to workplace interventions in cases of alcohol abuse. A survey of 7,255 supervisors in 114 worksites across seven major corporations was completed (79 percent responded). Information about barriers to intervention was elicited by 12 questions. Cluster analysis revealed three analytically independent classes of barriers—organizational, interpersonal, and individual. Most managers reported encountering some barriers to intervention: the extent of barriers perceived was related to characteristics of the worksite, job, and/or the environment. Barriers were greatest for female managers, managers in larger worksites, and the first-line supervisors. Barriers were also related to the form (formal vs. informal) of intervention a manager was willing to make. Intervention strategies must take into account differences between company worksites and job levels and not assume that policies are equally effective throughout the corporation.

**Bennett, J.B., and C.L. Beaudin. 2000. "Collaboration for Preventing Substance Abuse in the Workplace: Modeling Research Partnerships in Prevention." *Journal for Healthcare Quality* 22(4):24-30.**

The managed care community and employers have expressed interest in substance abuse prevention, but there has been little consensus about which prevention and health promotion activities are most appropriately provided in the workplace. In the past 5 years, academicians have become increasingly interested in working with health care organizations to develop and implement short- and long-term research partnerships. The most helpful prevention research will serve mutual interests and produce mutual benefit. This article presents a preliminary guide to help facilitate greater collaboration among managed behavioral health care organizations, employee assistance programs, and health services researchers interested in preventing substance abuse in the workplace. This guide identifies broad objectives, topic areas, critical applications, and assumptions that can guide collaborative efforts in prevention research.

**Bennett, J.B., and W.E. Lehman. 1998. "Workplace Drinking Climate, Stress, and Problem Indicators: Assessing the Influence of Teamwork (Group Cohesion)." *Journal of Studies on Alcohol* 59(5):608-618.**

While job-related alcohol use may be associated with problems for drinkers, less is known about the effects of employee drinking on coworkers. The authors hypothesized that either exposure to coworker drinking or the presence of a drinking climate would positively correlate with reports of stress and other problems. Following previous research, the authors also predicted that work group cohesion (or team orientation) would buffer against such problems. Two random samples of municipal employees (Ns = 909 and 1,068) completed anonymous surveys. These assessed individual drinking, coworker drinking, task-oriented group cohesion, the direct reports of negative consequences due to coworker substance use, and five problem indicators: job stress, job withdrawal, health problems, work accidents, and absences. In each sample, drinking climate correlated with stress and withdrawal more so than did reports of individual

drinking. Drinking climate and individual job stress were negatively associated with cohesion. ANCOVA results indicated that drinking climate combined with low cohesion resulted in increased vulnerability for all five problems. Moreover, cohesion appeared to attenuate the negative impact of exposure to drinking norms. As many as 40 percent of employees report at least one negative consequence associated with coworker substance use (alcohol and drugs). Because teamwork may buffer negative effects of drinking climate on coworkers, workplace prevention efforts might be enhanced through a focus on the social environment. These efforts would include team building and discussions of the impact of coworker drinking on employee productivity.

**Bennett, J.B., and W.E. Lehman. 2001. "Workplace Substance Abuse Prevention and Help Seeking: Comparing Team-Oriented and Informational Training." *Journal of Occupational Health Psychology* 6(3):243-254.**

Employees fail to seek help for alcohol or other drug (AOD) abuse because of unhealthy work climates, stigma, and distrust in Employee Assistance Programs (EAPs). To address such problems, the authors randomly assigned groups of municipal employees (N = 260) to two types of training: a 4-hour informational review of EAPs and policy, and an 8-hour training that embedded messages about AOD reduction in the context of team building and stress management. Pre- and post-training and 6-month follow-up surveys assessed change. Group privacy regulation, EAP trust, help seeking, and peer encouragement increased for team training. Stigma of substance users decreased for information training. EAP/policy knowledge increased for both groups. A control group showed little change. Help seeking and peer encouragement also predicted EAP utilization. Integrating both team and informational training may be the most effective approach for improving help seeking and EAP utilization.

**Bennett, J.B., W.E. Lehman, and G.S. Reynolds. 2000. "Team Awareness for Workplace Substance Abuse Prevention: The Empirical and Conceptual Development of a Training Program." *Prevention Science* 1(3):157-172.**

The authors describe the empirical and theoretical development of a workplace training program to help reduce and/or prevent employee alcohol and drug abuse and enhance aspects of the work group environment that supports ongoing prevention. The authors (1) examined the changing social context of the workplace (e.g., teamwork, privacy issues) as relevant for prevention, (2) reviewed studies that assessed risks and protective factors in employee substance abuse (work environment, group processes, and employee attitudes), (3) provided a conceptual model that focuses on work group processes (enabling, neutralization of deviance) as the locus of prevention efforts, (4) described an enhanced team-oriented training that was derived from previous research and the conceptual model, and (5) described potential applications of the program. The authors suggested that the research and conceptual model may help prevention scientists to assess the organizational context of any workplace prevention strategy. The need for this team-oriented approach may be greater among employees who experience psychosocial risks, such as workplace drinking climates, social alienation, and policies that emphasize deterrence and drug testing over educative prevention. The authors also discussed the limitations of the model.

**Bennett, J.B., G.S. Reynolds, and W.E.K. Lehman. 2003. "Understanding Employee Alcohol and Other Drug Use: Toward a Multilevel Approach." In *Preventing Workplace Substance Abuse: Beyond Drug Testing to Wellness*, J.B. Bennett and W.E.K. Lehman, eds., pp. 29-56. Washington, DC: American Psychological Association.**

In this book chapter, the authors reviewed national trends in employee alcohol and other drug (AOD) abuse as well as evidence for the negative consequences of employee AOD use. They also reviewed evidence showing the importance of work environment and organizational- and occupational-level factors as potential risks for AOD abuse. Because organizational and occupational factors (e.g., work climate) can influence employee AOD use, the authors asserted that prevention programmers and evaluators should be aware of contextual influences when designing, implementing, and evaluating their interventions. Finally, the authors offered a preliminary quantitative meta-analysis of research on workplace prevention programs.

**Berry, P. 2002. "Motivating Change." *Student Assistance Journal* (Spring).**

Student assistance programs (SAPs) aim to identify troubled students and connect them with services in the school and the community. This article discusses how counselors can use motivational interviewing techniques to implement a solutions-focused (or competency-based) approach to addressing problem behaviors, such as substance use. Motivational interviewing helps bring students to a point where they want to change their behavior. Through questioning, listening, and reframing what students say, the counselor helps students explore their behavior, weigh its pros and cons, clarify goals, identify steps to reach those goals, and establish strategies to maintain progress achieved.

**Bierut, L.J., S.H. Dinwiddie, H. Begleiter, R.R. Crowe, V. Hesselbrock, J.I. Nurnberger, B. Porjesz, M.A. Schuckit, and T. Reich. 1998. "Familial Transmission of Substance Dependence: Alcohol, Marijuana, Cocaine, and Habitual Smoking: A Report from the Collaborative Study on the Genetics of Alcoholism." *Archives of General Psychiatry* 55(11):982-994.**

Alcoholism and substance dependence frequently co-occur. Accordingly, the authors evaluated the familial transmission of alcohol, marijuana, and cocaine dependence and habitual smoking in the Collaborative Study on the Genetics of Alcoholism. Subjects (n=1212) who met criteria for both DSM-III-R alcohol dependence and Feighner definite alcoholism and their siblings (n=2755) were recruited for the study. A comparison sample was also recruited (probands, n=217; siblings, n=254). Subjects were interviewed with the Semi-Structured Assessment for the Genetics of Alcoholism. The familial aggregation of drug dependence and habitual smoking in siblings of alcohol-dependent and non-alcohol-dependent probands was measured by means of the Cox proportional hazards model. Rates of alcohol, marijuana, and cocaine dependence and habitual smoking were increased in siblings of alcohol-dependent probands compared with siblings of controls. For siblings of alcohol-dependent probands, 49.3 percent to 50.1 percent of brothers and 22.4 percent to 25.0 percent of sisters were alcohol dependent (lifetime diagnosis), but this elevated risk was not further increased by comorbid substance dependence in probands. Siblings of marijuana-dependent probands had an elevated risk of developing marijuana dependence (relative risk [RR], 1.78), and siblings of cocaine-dependent probands had an elevated risk of developing cocaine dependence (RR, 1.71). There was a similar finding

for habitual smoking (RR, 1.77 in siblings of habitual-smoking probands). Alcohol, marijuana, and cocaine dependence and habitual smoking are all familial, and there is evidence of both common and specific addictive factors transmitted in families. This specificity suggests independent causative factors in the development of each type of substance dependence.

**Borsari, B., and K.B. Carey. 2000. "Effects of a Brief Intervention with College Student Drinkers." *Journal of Consulting Psychology* 68(4):728-733.**

This study consisted of a randomized controlled trial of a one-session motivational intervention for college student binge drinkers. Sixty students who reported binge drinking two or more times in the past 30 days were randomly assigned to either a no-treatment control or a brief intervention group. The intervention provided students with feedback regarding personal consumption, perceived drinking norms, alcohol-related problems, situations associated with heavy drinking, and alcohol expectancies. At 6-week follow-up, the brief intervention group exhibited significant reductions in number of drinks consumed per week, number of times drinking alcohol in the past month, and frequency of binge drinking in the past month. Estimates of typical student drinking mediated these reductions. This study replicates earlier research on the efficacy of brief interventions with college students and extends previous work regarding potential mechanisms of change.

**Botvin, G.J., E. Baker, L. Dusenbury, E.M. Botvin, and T. Diaz. 1995. "Long-term Follow-up Results of a Randomized Drug Abuse Prevention Trial in a White Middle-Class Population." *Journal of the American Medical Association* 273(14):1106-1112.**

The authors evaluated the long-term efficacy of a school-based approach to drug abuse prevention. To do so, they conducted a randomized trial involving 56 public schools that received the prevention program with annual provider training workshops and ongoing consultation, the prevention program with videotaped training and no consultation, or "treatment as usual" (i.e., controls). Follow-up data were collected 6 years after baseline using school, telephone, and mailed surveys. The sample included a total of 3,597 predominantly White, twelfth-grade students who represented 60.41 percent of the initial seventh-grade sample. The intervention consisted of 15 classes in seventh grade, 10 booster sessions in eighth grade, and 5 booster sessions in ninth grade and taught general "life skills" and skills for resisting social influences to use drugs. Six tobacco, alcohol, and marijuana use self-report scales were recoded to create nine dichotomous drug use/outcome variables and eight polydrug use variables. The authors found significant reductions in both drug and polydrug use for the two groups that received the prevention program relative to controls. The strongest effects were produced for individuals who received a reasonably complete version of the intervention: there were up to 44 percent fewer drug users and 66 percent fewer polydrug (tobacco, alcohol, and marijuana) users. Overall, the authors concluded that drug abuse prevention programs conducted during junior high school can produce meaningful and durable reductions in tobacco, alcohol, and marijuana use if they (1) teach a combination of social resistance skills and general life skills, (2) are properly implemented, and (3) include at least 2 years of booster sessions.

**Bray, J.W., M.T. French, and B.J. Bowland. 1996. "The Cost of Employee Assistance Programs (EAPs): Findings from Seven Case Studies." *Employee Assistance Quarterly* 11(4):1-19.**

Despite the increasing prevalence of Employee Assistance Programs (EAPs), few studies have examined the cost of these programs. The authors present consistent and comparable cost data from case studies of EAPs at seven worksites. Because the same data collection instruments and methods were used to collect cost data at each worksite, the data can be used to directly compare cost estimates across programs. Key findings show that EAPs exhibit some economies of scale, that labor costs account for the majority of EAP costs regardless of the services offered, and that EAPs with similar costs per eligible employee may use a substantially different mix of resources. In addition to the cost analyses, the case study findings were compared with recently reported national estimates of EAP costs. Results of this study will help policy makers and employers determine the range of EAP costs for different types of services.

**Bray, J.W., G.A. Zarkin, M.L. Dennis, and M.T. French. 2000. "Symptoms of Dependence, Multiple Substance Use, and Labor Market Outcomes." *American Journal of Drug and Alcohol Abuse* 26(1):77-95.**

According to the National Comorbidity Study, approximately 11 percent of people between the ages of 15 and 54 in the United States have past-year substance use disorders, including alcohol dependence (7 percent), alcohol abuse (3 percent), any drug dependence (3 percent), and any drug abuse (1 percent). In relation to labor market outcomes, past research has indicated that alcohol and drug use disorders are potentially very costly. As a result, the prevalence and potential cost of alcohol and drug disorders are serious concerns for policy makers. However, few studies exist on the relationship between substance use disorders and labor market behavior. Therefore, the authors used data from the 1991, 1992, and 1993 National Household Surveys on Drug Abuse to examine the labor market behavior of substance users with symptoms of dependence similar to those given in the DSM-III-R. The purpose of the paper is twofold. First, the authors provided estimates of the relationship between symptoms of substance dependence and labor market behaviors for prime age workers in the United States. Second, they provided information on the impact of comorbidities on these estimates.

**Bray, J.W., G.A. Zarkin, C. Ringwalt, and J. Qi. 2000. "The Relationship between Marijuana Initiation and Dropping Out of High School." *Health Economics* 9(1):9-18.**

The prevalence of marijuana use among young people has risen rapidly in recent years, causing concern over the potential impact of such use on academic performance. Although recent studies have examined the effect of alcohol use on educational attainment, they have, according to the authors, largely ignored the potential negative effects of other substances, such as marijuana. As a result, the authors examined whether the relationship between the initiation of marijuana use and the decision to drop out of high school varies with the age of dropout or with multiple substance use. Data were from a longitudinal survey of 1,392 adolescents aged 16 to 18 years. Results suggest that marijuana initiation is positively related to dropping out of high school. Although the magnitude and significance of this relationship

varies with age of dropout and with other substances used, it is concluded that the effect of marijuana initiation on the probability of subsequent high school dropout is relatively stable, with marijuana users' odds of dropping out being about 2.3 times that of non-users. The authors consider the implications of these conclusions for both policy makers and researchers.

**Chaplin, D., and J. Hannaway. 1996. "High School Employment: Meaningful Connections for At-Risk Youth." The Urban Institute. <<http://www.urban.org/urlprint.cfm?ID=6141>>.**

Part-time employment among high school students has increased dramatically in recent years, raising the question of whether this is a productive activity for young people who are still enrolled in high school. The authors use data from the High School and Beyond Survey to estimate the effects of high school employment on education and employment outcomes as long as 12 years after graduating from high school. The focus is on students who are at-risk in the sense that they had low educational achievement and parental support while in high school. Evidence establishes that, even after controlling for a large number of other factors believed to affect economic outcomes, there is a strong link between working during high school and obtaining a job right after graduation. Over time, this association between working while in high school and long-term employment declines for most students but remains strong for students who are at-risk. High school employment was also associated with higher rates of students temporarily dropping out of school, but this early hiatus in their careers did not appear to be strongly indicative of their completed education 10 years later, possibly because many of them returned to school during the interim. More important, the correlation of a moderate-to-heavy work schedule (15 to 29 hours per week) during high school and earnings 8 to 11 years later was large and positive for the at-risk youth, even after allowing for their higher dropout rates. Smaller, but still positive, benefits were also found for those not at-risk.

**Chen, K., and D.B. Kandel. 1995. "The Natural History of Drug Use from Adolescence to the Mid-Thirties in a General Population Sample." *American Journal of Public Health* 85(1):41-47.**

This study sought to describe patterns of initiation, persistence, and cessation in drug use in individuals from their late-20s to their mid-30s, within a broad perspective that spans 19 years from adolescence to adulthood. A fourth wave of personal interviews was conducted at ages 34-35 with a cohort of men and women (n = 1160) representative of adolescents formerly enrolled in New York State public secondary high schools. A school survey was administered at ages 15-16, and personal interviews with participants and school absentees were conducted at ages 24-25 and 28-29. Retrospective continuous histories of 12 drug classes were obtained at each follow-up. There was no initiation into alcohol and cigarettes and hardly any initiation into illicit drugs after age 29, the age at which most use ceased. The largest proportion of new users was observed for prescribed psychoactives. Periods of highest use since adolescence based on relative and absolute criteria were delineated. Among daily users, the proportions of heavy users declined for alcohol and marijuana but not for cigarettes. Cigarettes are the most persistent of any drug used. Drug-focused interventions must target adolescents and young adults.

**Chen, K., and D.B. Kandel. 1998. "Predictors of Cessation of Marijuana Use: An Event History Analysis." *Drug and Alcohol Dependence* 50(2):109-121.**

Event history analysis was applied to monthly life and drug histories of a representative community sample of 706 marijuana users, followed from ages 15-16 to 34-35, to investigate factors associated with cessation of marijuana use from adolescence to adulthood. In addition to age and gender, the most important determinants of cessation are the phenomenology of marijuana use, social role participation, depressive symptoms, and deviance. Frequent users, those who started using early, and those who use illicit drugs other than marijuana are more likely to continue their marijuana use. Using marijuana for social reasons accelerates cessation, whereas using marijuana to change one's mood reduces cessation. Becoming pregnant and a parent is the most important social role leading to marijuana cessation for women. There is also a very important experimental effect of the interview itself on the reported timing of a cessation. The effect of a social context favorable to marijuana use appears to reflect selection rather than social influence.

**Chen, K., and D. Kandel. 2002. "Relationship between Extent of Cocaine Use and Dependence among Adolescents and Adults in the United States." *Drug and Alcohol Dependence* 68(1):65-85.**

The relationships between intensity of cocaine use, route of administration, and past-year dependence were investigated in a nationally representative sample of past year cocaine users aged 12 and over (N = 2349) from three aggregated surveys (1991–1993) of the National Household Survey on Drug Abuse. An approximate measure of DSM-IV dependence criteria was developed from self-reported symptoms of dependence and drug-related problems. The model and the data provided no basis for rejecting the hypothesis that the logit of the probability of dependence increased linearly with the logarithm of the frequency of cocaine use in the past year and with quantity of cocaine use in the past 30 days. The associations between frequency and quantity of cocaine use and cocaine dependence varied significantly by an age-by-gender interaction and race/ethnicity. African-American users, who had higher rates of cocaine dependence than Whites, used cocaine more frequently, used it by more addictive routes (smoking or injection), and were more likely to use crack. Adolescent females, who reported higher rates of cocaine dependence than males, used cocaine more frequently and reported more symptoms at low doses of cocaine use. Multivariate logistic regressions indicated that frequency and quantity of use, as well as route of administration, retained unique associations with cocaine dependence. Implications of the findings for the epidemiological study of cocaine use and dependence are discussed.

**Chen, K., D.B. Kandel, and M. Davies. 1997. "Relationships between Frequency and Quantity of Marijuana Use and Last Year Proxy Dependence among Adolescents and Adults in the United States." *Drug and Alcohol Dependence* 46(1-2):53-67.**

The association between levels of marijuana use and last-year dependence is investigated in a nationally representative sample of adolescents and adults, who used marijuana within the last year (n = 9284). Data were aggregated from three surveys (1991–1993) of the National Household Survey on Drug Abuse. A proxy measure of DSM-IV dependence criteria was developed from self-reported symptoms of dependence and drug-related problems. Both

frequency and quantity of marijuana use within the last year were linearly associated with the logic of the probability of being dependent on marijuana. The associations varied significantly by age but not gender. Adolescents were dependent at a lower frequency and quantity of use than adults: the differences diverged as level of use increased. Twice as many adolescents as adults who used marijuana near-daily or daily within the last year were identified as being dependent (35 percent versus 18 percent). Frequency and quantity of use each retained a unique effect on dependence, but frequency appeared to be more important than quantity in predicting last-year dependence. These results provide insight into the processes underlying the age and gender differentials observed in the prevalence of marijuana dependence. The implications of the findings for the epidemiology of marijuana use and dependence are discussed.

**Clark, D.B., N. Pollock, O.G. Bukstein, A.C. Mezzich, J.T. Bromberger, and J.E. Donovan. 1997. "Gender and Comorbid Psychopathology in Adolescents with Alcohol Dependence." *Journal of the American Academy of Child & Adolescent Psychiatry* 36(9):1195-1203.**

Although several mental disorders have been shown to be common in adolescents with substance use disorders, prior studies have not specifically focused on alcohol dependence and have not had sufficient sample sizes to examine gender effects. This study contrasts mental disorder diagnoses and symptoms between a sample of adolescents with alcohol dependence and a community control sample of adolescents and incorporates gender analyses.

Adolescents (aged 14 to 18 years) with alcohol dependence (females: n = 55; males: n = 78) and community-dwelling control adolescents without substance use disorders (females: n = 44; males: n = 42) were assessed by means of a semistructured interview for DSM-III-R. Although cannabis and hallucinogen use disorders were common in the alcohol dependence group, females and males had similar rates. Conduct disorder (CD), oppositional defiant disorder, attention-deficit hyperactivity disorder, major depression (MD), and posttraumatic stress disorder (PTSD) had significantly higher rates in the alcohol dependence group than in the community control group. Depression and PTSD symptoms were more strongly associated with alcohol dependence in females than in males. A configural frequency analysis showed that CD and MD tended to occur together in both female and male adolescents with alcohol dependence. While alcohol-dependent females and males similarly exhibited more comorbid disorders than control adolescents, gender affects the relationships of alcohol dependence to MD and PTSD. Rather than reflecting distinct types, the comorbid disorders of CD and MD jointly characterize many adolescents with alcohol dependence.

**Clarke, G.N., M. Hornbrook, F. Lynch, M. Polen, J. Gale, W. Beardslee, E. O'Connor, and J. Seeley. 2001. "A Randomized Trial of a Group Cognitive Intervention for Preventing Depression in Adolescent Offspring of Depressed Patients." *Archives of General Psychiatry* 58:1127-1134.**

This investigation attempted to prevent unipolar depressive episodes in a sample of high school adolescents with an elevated risk of depressive disorder. Adolescents at risk for future depressive disorder by virtue of having elevated depressive symptomatology were selected with a two-stage case-finding procedure. The Center for Epidemiologic Studies-Depression Scale (CES-D) was administered to 1,652 students; adolescents with elevated CES-D scores were

interviewed with the Schedule for Affective Disorders and Schizophrenia for School-Age Children. Subjects with current affective diagnoses were referred to nonexperimental services. The remaining 150 consenting subjects were considered at risk for future depression and randomized to either a 15-session cognitive group prevention intervention or a "usual care" control condition. Subjects were reassessed for DSM-III-R diagnostic status after the intervention and at 6- and 12-month follow-up points. Survival analyses indicated a significant 12-month advantage for the prevention program, with affective disorder total incidence rates of 14.5 percent for the active intervention versus 25.7 percent for the control condition. No differences were detected for nonaffective disorders across the study period. Depressive disorder can be successfully prevented among adolescents with an elevated future risk.

**Clarke, G.N., W. Hawkins, M. Murphy, L.B. Sheeber, P.M. Lewinsohn, and J.R. Seeley. 1995. "Targeted Prevention of Unipolar Depressive Disorder in an At-Risk Sample of High School Adolescents: A Randomized Trial of a Group Cognitive Intervention." *Journal of the American Academy of Child & Adolescent Psychiatry* 34(3):312-321.**

Adolescent offspring of depressed parents are at high risk for development of depression. Cognitive restructuring therapy holds promise for preventing progression to depressive episodes. A randomized, controlled trial was conducted to prevent depressive episodes in at-risk offspring (aged 13 to 18 years) of adults treated for depression in a health maintenance organization (HMO). Potential adult cases were found by reviewing the HMO pharmacy records for dispensation of antidepressant medication and the mental health appointment system. Eligible offspring had subdiagnostic depressive symptoms insufficient to meet full DSM-III-R criteria for affective disorder and/or a past mood disorder. These youth were randomized to usual HMO care (n = 49) or usual care plus a 15-session group cognitive therapy prevention program (n = 45). The authors detected significant treatment-by-time (program) effects for the Center for Epidemiological Studies Depression Scale ( $p = 0.005$ ) and the Global Assessment of Functioning scores ( $p = 0.04$ ). Survival analysis of incident major depressive episodes during a median 15-month follow-up found a significant advantage ( $p = 0.003$ ) for the experimental condition (9.3 percent cumulative major depression incidence) compared with the usual-care control condition (28.8 percent). A brief, group cognitive therapy prevention program can reduce the risk for depression in the adolescent offspring of parents with a history of depression.

**Cloninger, C.R. 1987. "Neurogenetic Adaptive Mechanisms in Alcoholism." *Science* 236(4800):410-416.**

Clinical, genetic, and neuropsychopharmacological studies of developmental factors in alcoholism are providing a better understanding of the neurobiological bases of personality and learning. Studies of the adopted-away children of alcoholics show that the predisposition to initiate alcohol-seeking behavior is genetically different from susceptibility to loss of control after drinking begins. Alcohol-seeking behavior is a special case of exploratory appetitive behavior and involves different neurogenetic processes than do susceptibility to behavioral tolerance and dependence on the anti-anxiety or sedative effects of alcohol. Three dimensions of personality have been described that may reflect individual differences in brain systems modulating the activation, maintenance, and inhibition of behavioral responses to the effects of alcohol and

other environmental stimuli. These personality traits distinguish alcoholics with different patterns of behavioral, neurophysiological, and neuropharmacological responses to alcohol.

**Cloninger, C.R., S. Sigvardsson, and M. Bohman. 1988. "Childhood Personality Predicts Alcohol Abuse in Young Adults." *Alcoholism, Clinical and Experimental Research* 12(4):494-505.**

A total of 431 children (233 boys, 198 girls) born in Stockholm, Sweden, had a detailed behavioral assessment at 11 years of age, including a detailed interview with their schoolteachers, and were reevaluated at 27 years of age to identify alcoholism or alcohol abuse. Specific predictions from a neurobiological learning theory about the role of heritable personality traits in susceptibility to alcohol abuse were tested in this prospective longitudinal study. Three dimensions of childhood personality variation were identified and rated without knowledge of adult outcome. These three dimensions (novelty-seeking, harm avoidance, and reward dependence) were largely uncorrelated with one another, and each was predictive of later alcohol abuse. Absolute deviations from the mean of each of the three personality dimensions were associated with an exponential increase in the risk of later alcohol abuse. High novelty-seeking and low harm avoidance were most strongly predictive of early-onset alcohol abuse. These two childhood variables alone distinguished boys who had nearly 20-fold differences in their risk of alcohol abuse: the risk of alcohol abuse varied from 4 percent to 75 percent depending on childhood personality.

**Colder, C.R., and L. Chassin. 1999. "The Psychosocial Characteristics of Alcohol Users versus Problem Users: Data from a Study of Adolescents at Risk." *Development and Psychopathology* 11(2):321-348.**

Most previous research has assumed that adolescent alcohol use and problem use represent a continuum and are influenced by the same psychosocial factors, with problem use representing more severe psychosocial impairment. The current study evaluated this assumption by identifying the correlates of adolescent alcohol use and those of problem use. Using a community sample of adolescent children of alcoholics (COAs) and a demographically matched comparison group (non-COAs), a typology of adolescent alcohol use was created, and alcohol use groups were compared on variables chosen from nine psychosocial domains. The correlates of problem alcohol use were psychological functioning. In contrast, the determinants of moderate alcohol use reflected unconventionality and socialization specific to alcohol. Few psychosocial variables distinguished abstainers from light drinkers. Intervention and methodological implications of these findings are discussed.

**Commerford, A.W. 1999. "Work Dysfunction and Addiction: Common Roots." *Journal of Substance Abuse Treatment* 16(3):247-253.**

A review of the literature identified similarities in the self-efficacy roots of substance abuse and vocational dysfunction, along with a potential benefit to providing vocational interventions as part of substance abuse treatment. Based on the evidence presented, the author recommends using social cognitive counseling, using client functioning and level of care to guide vocational interventions, closely monitoring clients who are working, providing for ongoing social support, and committing to the availability of long-term aftercare and crisis intervention counseling to ensure developmental gains are not lost.

**Cook, P.J., and M.J. Moore. 1993. "Drinking and Schooling." *Journal of Health Economics* 12(4):411-429.**

The authors used National Survey of Longitudinal Youth data from 1979 through 1988 to examine the effects of drinking on educational attainment. Students who reported heavy drinking were less likely to attend college, attended fewer years of college, and graduated at a lower rate than their peers. Public policies aimed to restrict drinking, such as beer taxes and minimum legal drinking age, had a statistically significant effect on the likelihood that students would graduate with a 4-year degree, presumably because alcohol control measures deter underage students from drinking.

**Cook, R.F., and W.E. Schlenger. 2002. "Prevention of Substance Abuse in the Workplace: Review of Research on the Delivery of Services." *Journal of Primary Prevention* 23(1):115-142.**

With the growing recognition that most illicit drug users and heavy drinkers are members of the workforce, the workplace has become an increasingly significant, although still underutilized, vehicle for the delivery of substance abuse prevention services. On most days, the large majority of substance abusers will be found in the workplace; targeting working adults can help prevent illicit drug use and problem drinking in a large segment of the aged 18 to 65. The authors discuss some of the chief reasons for engaging in substance abuse prevention in the workplace; outline the foundations of workplace prevention services; and review recent research on workplace substance abuse prevention, including the major preventive interventions aimed at the workplace environment and the individual worker. A major hurdle to effective delivery of substance abuse prevention in the workplace is the stigma associated with admitting such a problem. Imbedding substance abuse prevention content in stress management or health promotion programs can be an effective way to neutralize the stigma. The authors close with a discussion of future programming and research on the delivery of workplace prevention services. They point to several positive indications for future workplace prevention efforts: workplace health promotion programs are on the increase; workplace initiatives (e.g., substance use policies, specially designed interventions) *do* have an impact on employee substance use; programs that help parents address substance use in their families are on the increase; and computer-based substance abuse prevention programs are a powerful, new tool for workplace substance abuse prevention.

**Cook, R.F., A.S. Back, and J. Trudeau. 1996. "Preventing Alcohol Use Problems among Blue-Collar Workers: A Field Test of the Working People Program." *Substance Use & Misuse* 31(3):255-275.**

The authors developed and presented a program designed to prevent alcohol misuse among working adults in four sessions to employees of a medium-sized printing company. The "Working People" program, based on a social-learning model, was field-tested with 108 employees in the context of a quasi-experimental design. Members of the Program Group (n = 38) and two Comparison Groups (n = 26 and 44) were assessed before and after the program on a questionnaire containing measures of alcohol consumption, attitudes and intentions regarding alcohol use, problem consequences of alcohol use, and health beliefs. Program effects were demonstrated on alcohol consumption, motivation to reduce consumption,

and problem consequences of drinking. No effects were found on health beliefs or self-efficacy to reduce drinking. Although the findings are qualified by the self-selected nature of the samples, the results suggest that alcohol consumption can be reduced among adults who participate in this type of worksite program.

**Cook, R.F., A.S. Back, and J. Trudeau. 1996. "Substance Abuse Prevention in the Workplace: Recent Findings and an Expanded Conceptual Model." *Journal of Primary Prevention* 16(3):319-339.**

The majority of heavy drinkers and users of illicit drugs are employed adults, yet there is a dearth of sophisticated substance abuse prevention efforts in the workplace. This article reviews the approaches to worksite-based substance abuse prevention and presents the results of a field test of a prevention program aimed at the individual worker. Based on these findings and other theoretical perspectives from the literature, an expanded conceptual model for workplace substance abuse preventions is presented that incorporates elements of the sociocultural environment and the beliefs and motivations of individual workers. Both the substance abuse prevention field and the business community have shown increased interest in preventing substance abuse in the workplace. The field test indicates that a health-oriented substance abuse prevention program can help reduce substance abuse in the workforce.

**Cook, R.F., A.S. Back, J. Trudeau, and T. McPherson. 2003. "Integrating Substance Abuse Prevention into Health Promotion Programs in the Workplace: A Social Cognitive Intervention Targeting the Mainstream User." In *Preventing Workplace Substance Abuse: Beyond Drug Testing to Wellness*. J.B. Bennett and W.E.K. Lehman, eds., pp. 97-133. Washington, DC: American Psychological Association.**

In this chapter, the authors argue for delivering substance abuse prevention in the context of health promotion and report findings from field tests of their programs. In most workplace environments, substance abuse prevention is not part of health promotion, probably because it is assumed that employee assistance programs (EAPs) are addressing this need. But EAPs are treatment oriented, only helping the "walking wounded" who have already been affected by substance use. The authors' rationale for incorporating prevention efforts into health promotion includes the following: substance use is a health hazard; substance use is related to all the components of health promotion (stress, weight control, nutrition, exercise, mental health); a major obstacle to employee participation in substance abuse prevention efforts is the stigma; health promotion programs will reach substance users who do not yet have a problem; promoting healthful lifestyles and controlling substance use are mutually reinforcing messages; and health programs with a substance use component can perform outreach for EAPs. Field-tested programs were based on cognitive behavioral principles and designed to be transportable (i.e., major elements of program were presented in print and video). The interventions consisted of three or four brief sessions delivered over lunch or during breaks, totaling 3 hours or less. The sessions stressed the effects of alcohol consumption on health and the positive image of alcohol presented by the media. Subsequent sessions focused on controlling consumption and positive alternatives to alcohol abuse. Based on controlled field tests, the authors conclude that the substance abuse materials can be incorporated into health promotion programs without diluting the impact of these programs. Stress management programs were the most promising vehicles for workplace substance abuse prevention; nutrition

and weight management programs were less successful. Parenting programs were also useful for substance abuse prevention, in the context of keeping children drug free and addressing adolescent substance abuse.

**Cook, R.F., R.K. Hersch, A.S. Back, and T.L. McPherson. In press. "The Prevention of Substance Abuse Among Construction Workers: A Field Test of a Social-Cognitive Program." *Journal of Primary Prevention*.**

A substance abuse prevention program based on social-cognitive principles and cast in a health promotion framework was tested on 374 construction workers from five sites. Subjects were randomly assigned to receive the "Power Tools" program with substance abuse material or without the material. Both self-report and bioassay data were collected before and approximately 1 year after the program. Data were analyzed mainly by analysis of covariance, analysis of variance, and chi-square analysis. Program effects were not demonstrated on consumption of substances but were found on stages-of-change measures of smoking and drinking and on the frequency with which parents talk with their children about alcohol and drugs. Results suggest that a program of this type might help construction workers move toward reductions in licit substance use but not in illicit drug use.

**Cooper, M.L., M. Russell, J.B. Skinner, M.R. Frone, and P. Mudar. 1992. "Stress and Alcohol Use: Moderating Effects of Gender, Coping, and Alcohol Expectancies." *Journal of Abnormal Psychology* 101(1):139-152.**

A stressor vulnerability model of stress-induced drinking was tested in a stratified random sample of 1,316 Black and White adult drinkers. Stressors were highly predictive of both alcohol use and drinking problems among men who relied on avoidant forms of emotion coping or held strong positive expectancies for alcohol's effects and accounted for more than 35 percent of the variance in alcohol use among the subgroup of men who were high in both vulnerability factors. In contrast, stressors were negatively related among men who were low in both and were unrelated among women regardless of their coping or expectancies. These findings suggest that tension reduction theories of alcohol use are overly broad and that individual characteristics must be considered to account for stress-related effects on alcohol use and abuse.

**Copans, S.A., J. Kinney, and T.W. Estroff. 2001. "Adolescent Development and Substance Abuse." In *Manual of Substance Abuse Treatment*, T.W. Estroff, ed., pp. 265-272. Washington, DC: American Psychiatric Publishing.**

**Dee, T.S., and W.N. Evans. 2003. "Teen Drinking and Educational Attainment: Evidence from Two-Sample Instrumental Variables Estimates." *Journal of Labor Economics* 21(1):178-209.**

This study examines the effects of teen alcohol use and availability on educational attainment. The authors demonstrate that teens who faced a lower minimum legal drinking age (MLDA) were substantially more likely to drink. However, they find that changes in MLDA had small and statistically insignificant effects on educational attainment. Using matched cohorts from two data sets, the authors also report two-sample instrumental variable estimates of the effect of teen drinking on educational attainment. These estimates are smaller than the corresponding

ordinary least squares estimates and statistically insignificant, indicating that teen drinking does not have an independent effect on educational attainment.

**Dennis, M.L. 1990. "Assessing the Validity of Randomized Field Experiments: An Example from Drug Abuse Treatment Research." *Evaluation Review* 14(4):347-373.**

According to the author of this article, randomized field experiments are often logistical failures. They are particularly difficult to implement when the intervention involves a large number of components or service providers. Although surmountable, potential methodological problems with using randomized experiments to evaluate intervention programs under field (i.e., real world) conditions must be anticipated and resolved for the experiment to succeed. The author examines six potential major problems: treatment dilution, treatment contamination or confounding, inaccurate case flow and power estimates, violations of the random assignment process, changes in the environmental context, and changes in the treatment regimes. The author describes the general problems, several methodological developments related to them, and attempts to deal with these problems. Developing designs and implementation strategies to deal with these six problems is crucial to extending the usefulness of randomized field experiments to evaluate social policies and experiments.

**Dooley, D., and J. Prause. 1998. "Underemployment and Alcohol Misuse in the National Longitudinal Survey of Youth." *Journal of Studies on Alcohol* 59(6):669-680.**

The authors measured the impact of unemployment and underemployment on alcohol misuse. To do so, they studied a panel of respondents from the National Longitudinal Survey of Youth in 1984-1985 and 1988-1989. In each pair of years, the effect of employment change (e.g., becoming underemployed) on alcohol misuse was assessed controlling for misuse in the first year. Alcohol misuse was operationalized in two ways: elevated symptoms and heavy drinking. Three samples were analyzed: a core sample of 2,441 who were available in both pairs of years (approximately 65 percent male) and two extended samples that included everyone available in one pair of years but not the other (n = 4,183 in 1984-85 and n = 3,926 in 1988-89). The 1984-85 analyses revealed a significant association of adverse change in employment with both elevated alcohol symptoms and heavy drinking (the latter moderated by prior heavy drinking). The 1988-89 analyses found no relationship between adverse change in employment and heavy drinking in the core sample and no main effect of adverse change in employment on symptoms, but they did reveal interactions involving prior symptoms (core sample) and marital status (extended sample). Several explanations for these decreasing effects over time were considered, including changes in measurement reliability, statistical power, economic environment, and respondents' maturity. These results confirm previous findings that job loss can increase the risk of alcohol misuse, provide new evidence that two types of underemployment (involuntary part-time and poverty-level wage) can also increase this risk, and suggest that these effects vary over time.

**Dusenbury, L. 1999. "Workplace Drug Abuse Prevention Initiatives: A Review." *Journal of Primary Prevention* 20(2):145-156.**

Likely key elements of effective prevention strategies emerging from the literature (and from discussions with experts) are summarized. These include (1) program content based on proven

prevention theory and research, (2) comprehensive approaches that address multiple risk and protective factors and generalize across settings, (3) material that is relevant during important transitions in an employee's life and career, (4) sensitivity to the culture of the workplace and community, (5) sufficient dosage and follow-up, (6) use of interactive teaching techniques, (7) training for prevention program providers, and (8) evaluation to know that the intervention had the desired effect on behavior. Evaluation of workplace substance abuse prevention has been limited; the need for future research is discussed. The paper concludes with a discussion of how to increase interest in substance abuse prevention by employers.

**Edberg, M., C. Ringwalt, D. Galvin, M. Eisenberg, and D. Driscoll. 2003. "The Impact of the Transition to Work on Youth Substance Abuse." Unpublished working paper.**

Many studies have found that adolescent students who are employed report higher levels of substance use than students who do not work. Explanations abound. Students who choose to work may have been predisposed to abuse substances regardless of employment, disengagement from conventional institutions may be both cause and result of early work involvement, lower levels of attachment to family and school are predictive of adolescent employment, and working is predictive of alcohol use. But the causal dynamics that subtend these relationships remain unclear. The authors conducted 11 focus groups of working adolescents (aged 15 to 17) and young adults (aged 18 to 23, all of whom were in college) in Washington, DC, Raleigh-Durham, NC, and Tucson, AZ. Seventy-five participants discussed the types of work they performed, working conditions, why they sought work, patterns of substance use before and after taking a job, and issues pertinent to substance use, such as peer relationships, work context, and social pressures. Among 15- to 17-year-olds, the only work-related factor associated with increased substance use was having more money and independence. Among 18- to 25-year-olds, work did not appear to be connected to any increase in substance use. Some participants reported that substance use would jeopardize things (such as good grades, employment) that they had worked hard to achieve. Premature adoption of adult behaviors is often seen as a risk factor in substance use (as adolescents hasten or skip altogether a gradual transition to adulthood), but this study reports that adopting these behaviors may actually serve as a protective factor.

**Ellickson, P.L., R.M. Bell, and K. McGuigan. 1993. "Preventing Adolescent Drug Use: Long-Term Results of a Junior High Program." *American Journal of Public Health* 83(6):856-861.**

Although several studies have reported short-term gains for drug-use prevention programs targeted at young adolescents, few have assessed the long-term effects of such programs. Such information is essential for judging how long prevention benefits last. As a result, the authors reported results over a 6-year period for a multisite randomized trial that achieved reductions in drug use during the junior high school years. The 11-lesson curriculum, which was tested in 30 schools in eight highly diverse West Coast communities, focused on helping seventh and eighth grade students develop the motivation and skills to resist drugs. Schools were randomly assigned to treatment and control conditions. About 4,000 students were assessed in grade 7 and six times thereafter through grade 12. Program effects were adjusted for pretest covariates and school effects. Once the lessons stopped, the program's effects on drug use stopped. Effects on cognitive risk factors persisted for a longer time (many through

grade 10) but were not sufficient to produce corresponding reductions in use. The authors concluded that it is unlikely that early prevention gains can be maintained without additional prevention efforts during high school. Future research is needed, they say, to develop and test such efforts.

**Ennett, S.T., N.S. Tobler, C.L. Ringwalt, and R.L. Flewelling. 1994. "How Effective is Drug Abuse Resistance Education? A Meta-Analysis of Project DARE Outcome Evaluations." *American Journal of Public Health* 84(9):1394-1401.**

Project DARE (Drug Abuse Resistance Education) is the most widely used school-based drug use prevention program in the United States, but the findings of rigorous evaluations of its effectiveness have not been considered collectively. As a result, the authors of this article used meta-analytic techniques to review eight methodologically rigorous DARE evaluations. Weighted effect size means for several short-term outcomes also were compared with means reported for other drug use prevention programs. The DARE effect size for drug use behavior ranged from .00 to .11 across the eight studies; the weighted mean for drug use across studies was .06. For all outcomes considered, the DARE effect size means were substantially smaller than those of programs emphasizing social and general competencies and using interactive teaching strategies. The authors concluded that DARE's short-term effectiveness for reducing or preventing drug use behavior is small and is less than for interactive prevention programs.

**Ennett, S.T., K.E. Bauman, M. Pemberton, V.A. Foshee, Y.C. Chuang, T.S. King, and G.G. Koch. 2001. "Mediation in a Family-Directed Program for Prevention of Adolescent Tobacco and Alcohol Use." *Preventive Medicine* 33(4):333-346.**

Family Matters is a universal intervention designed to prevent adolescent tobacco and alcohol use through involvement of family members and by targeting family risk factors for tobacco and alcohol use. Previously reported findings suggest that the program reduced the prevalence of both adolescent smoking and drinking in the 12 months after program completion. The authors report analyses conducted to identify the mediators through which the program influenced adolescent smoking and drinking. To do so, 1,014 adolescents aged 12 to 14 years and their families, identified by random-digit-dialing, were entered into a randomized trial. Adolescents and their parents provided data by telephone for measuring mediator and behavioral variables at baseline, 3 months, and 12 months after program completion. Repeated-measures logistic regression with generalized estimating equations was used to assess mediation processes. The authors found that the program resulted in statistically significant changes in several substance-specific aspects of the family, such as rule setting about tobacco and alcohol use. However, the intermediate family effects did not account for the program effects on adolescent behavior. As a result, the authors concluded that the variables hypothesized to explain program effects were not identified by direct empirical examination.

**Ennett, S.T., C.L. Ringwalt, J. Thorne, L.A. Rohrbach, A. Vincus, A. Simons-Rudolph, and S. Jones. 2003. "A Comparison of Current Practice in School-Based Substance Use Prevention Programs with Meta-Analysis Findings." *Prevention Science* 4(1):1-14.**

The series of seminal meta-analytic studies of school-based substance use prevention program studies conducted by the late Nancy S. Tobler and colleagues concluded that programs with

content focused on social influences' knowledge, drug refusal skills, and generic competency skills and that use participatory or interactive teaching strategies were more effective than programs focused on knowledge and attitudes and favoring traditional didactic instruction. The present study compared current school practice against evidence-based standards for "effective content" and "effective delivery," derived from the Tobler findings. Respondents were the lead staff who taught substance use prevention in the 1998-1999 school year in a national sample of public and private schools that included middle school grades (N = 1,795). Results indicate that most providers (62.25 percent) taught effective content, but few used effective delivery (17.44 percent), and fewer still used both effective content and delivery (14.23 percent). Those who taught an evidence-based program (e.g., Life Skills Training, Project ALERT), however, were more likely to implement both effective content and delivery, as were those teachers who were recently trained in substance use prevention and were comfortable using interactive teaching methods. Findings indicate that the transfer to practice of research knowledge about school-based substance use prevention programming has been limited.

**Farkas, A.J., E.A. Gilpin, M.M. White, and J.P. Pierce. 2000. "Association between Household and Workplace Smoking Restrictions and Adolescent Smoking." *Journal of the American Medical Association* 284(6):717-722.**

Recent marked increases in adolescent smoking indicate a need for new prevention approaches. Whether workplace and home smoking restrictions play a role in such prevention is unknown. This study aimed to assess the association between workplace and home smoking restrictions and adolescent smoking. Data were analyzed from two large national population-based surveys, the Current Population Surveys of 1992-1993 and 1995-1996, which included 17,185 adolescents aged 15 to 17 years. Adolescents' smoking status was compared by presence of home and workplace smoking restrictions. After adjusting for demographics and other smokers in the household, adolescents who lived in smoke-free households were 74 percent (95 percent confidence interval [CI], 62 percent-88 percent) as likely to be smokers as adolescents who lived in households with no smoking restrictions. Similarly, adolescents who worked in smoke-free workplaces were 68 percent (95 percent CI, 51 percent-90 percent) as likely to be smokers as adolescents who worked in a workplace with no smoking restrictions. Adolescent smokers were 1.80 (95 percent CI, 1.23-2.65) times more likely to be former smokers if they lived in smoke-free homes. The most marked relationship of home smoking restrictions to current adolescent smoking occurred in households where all other members were never-smokers. Current smoking prevalence among adolescents in homes without smoking restrictions approached that among adolescents in homes with a current smoker but with smoking restrictions. Parents with minor children should be encouraged to adopt smoke-free homes. Smoke-free workplaces can also augment smoking prevention. These findings emphasize the importance of tobacco control strategies aimed at the entire population rather than just at youth.

**Fertman, C.I., C. Fichter, J. Schlesinger, S. Tarasevich, H. Wald, and X. Zhang. 2001. "Evaluating the Effectiveness of Student Assistance Programs in Pennsylvania." *Journal of Drug Education* 31(4):353-366.**

The authors present data from an evaluation of the Pennsylvania Student Assistance Program (SAP). Focusing on both program process and effectiveness, the evaluation was conducted to

determine the overall efficacy of SAPs in Pennsylvania and, more specifically, how SAP is currently being implemented. Five data collection strategies were employed: statewide surveys of SAP team members and county administrators, focus groups, site visits, and the Pennsylvania Department of Education SAP Database. A total of 1,204 individual team members from 154 school buildings completed the team member survey. Fifty-three county administrators completed the county administrator survey. Focus groups were comprised of SAP coordinators, school board personnel, and community agency staff. Site visits were conducted at five schools. Findings of the evaluation indicate that SAP in Pennsylvania is being implemented as designed. Recommended is the development of benchmarks and indicators that focus on the best SAP practices and the extent to which various indicators of the effectiveness of SAP are occurring at appropriate levels.

**Flay, B.R., D. Koepke, S.J. Thomson, S. Santi, J.A. Best, and K.S. Brown. 1989. "Six-Year Follow-up of the First Waterloo School Smoking Prevention Trial." *American Journal of Public Health* 79(10):1371-1376.**

The authors reported 6-year follow-up data from the first large-scale randomized trial of the social influences approach to smoking prevention. In 1979, 22 schools were randomly assigned to program or control conditions. Students in program schools received a social influences curriculum in six core and two maintenance sessions in grade 6, two booster sessions in grade 7, and one booster session in grade 8. All students were assessed at pretest (T1), immediate posttest (T2), end of grade 6 (T3), beginning and end of grade 7 (T4 and T5), end of grade 8 (T6), and grades 11 and 12 (T7 and T8). Ninety percent of study students were relocated and data obtained from over 80 percent of them at T8. Program effects on experimental smoking observed in grades 7 and 8 had completely decayed by T8, 6 years after the beginning of the program. Grade 6 smoking experience and social risk were each strong predictors of T8 smoking behavior. Subjects who had left school were smoking at more than twice the rate of subjects still in high school (grade 12) at T8. The authors discuss implications of the results.

**French, M.T., and G.A. Zarkin. 1998. "Mental Health, Absenteeism and Earnings at a Large Manufacturing Worksite." *Journal of Mental Health Policy and Economics* 1:161-172.**

Recent studies have examined the relationship between mental illness and labor market variables. Findings are inconsistent, however, and leave unanswered many questions concerning both the nature and magnitude of the relationship. This study analyzed a worksite-based data set to explore the relationship between symptoms of emotional and psychological problems and employee absenteeism and earnings among employees at a large U.S. worksite. Two measures of absenteeism were combined—days absent during the past 30 days due to sickness or injury and days absent during the past 30 days because the employee did not want to be at work—to create both a dichotomous (i.e., ever absent) and a continuous (i.e., number of days absent) absenteeism variable. Annual earnings were measured as personal earnings from the primary job. Various statistical models were tested to determine the independent and joint (with alcohol and illicit drug use) relationship between symptoms of emotional problems and labor market variables. The analysis consistently finds that workers who report symptoms of emotional/psychological problems have higher absenteeism and lower earnings than otherwise similar coworkers. This finding is robust to model specification and to the inclusion of

comorbid conditions, such as alcohol and illicit drug use. This study contributes new information to the literature in this area by estimating the effects of emotional/psychological symptoms on two important labor market variables: absenteeism and earnings. Several specifications of the absenteeism and earnings equations were estimated to test the independent effect of emotional symptoms and the joint effects of emotional symptoms and other comorbid conditions. Results suggest that employers should consider the productivity losses associated with workers' mental health when designing worksite-based programs such as Employee Assistance Programs (EAPs). All four measures of emotional symptoms had a positive and statistically significant relationship with absenteeism and a negative and statistically significant relationship with personal earnings. These findings were robust across all specifications, even when the effects of other potentially confounding factors (i.e., alcohol and drug use variables) are included. In addition, the number of days intoxicated and cigarette use in the past year appear to be significantly related to earnings even after controlling for emotional symptoms. Finally, the explanatory power of the models is relatively high for cross-sectional data, especially for the earnings regressions. Findings suggest that employers might do well to reassess the priorities of their EAPs and consider directing more of their resources to diagnosing and assisting employees with emotional and psychological distress.

**French, M.T., M.C. Roebuck, and P. Kebrau Alexandre. 2004. "To Test or Not To Test: Do Workplace Drug Testing Programs Discourage Employee Drug Use?" *Social Science Research* 33(1):45-63.**

Workplace drug testing programs are often met with intense criticism. Despite resistance among labor and consumer groups and a lack of rigorous empirical evidence regarding effectiveness, drug testing programs have remained popular with employers throughout the 1990s and into the current century. The present study analyzed nationally representative data on more than 15,000 U.S. households to determine whether various types of workplace drug testing programs influenced the probability of drug use by workers. The study estimated several empirical specifications using both univariate and bivariate probit techniques. The specification tests favored the bivariate probit model over the univariate probit model. Estimated marginal effects of drug testing on any drug use were negative, significant, and relatively large, indicating that drug testing programs are achieving one of the desired effects. The results were similar when any drug use was replaced with chronic drug use in the models. These results have important policy implications regarding the effectiveness and economic viability of workplace anti-drug programs.

**French, M.T., G.A. Zarkin, and L.J. Dunlap. 1998. "Illicit Drug Use, Absenteeism, and Earnings at Six U.S. Worksites." *Contemporary Economic Policy* 16(3):334-346.**

Considerable national attention has focused on the adverse consequences of illicit drug use. Although several studies estimate the relationship between illicit drug use and wages, the findings are inconsistent. Surprisingly, some researchers identify a positive and statistically significant relationship between wages and drug use for young adults. Motivated by this counter-intuitive finding, the authors compiled unique data on employees at six worksites in order to explore the relationships among drug use, wages, and absenteeism. Using various measures of current and lifetime drug use and accounting for alcohol-use comorbidity, the

authors found predominantly insignificant relationships (both direct and indirect) between drug use and both wages and absenteeism, regardless of gender.

**French, M.T., G.A. Zarkin, T.D. Hartwell, and J.W. Bray. 1995. "Prevalence and Consequences of Smoking, Alcohol Use, and Illicit Drug Use at Five Worksites." *Public Health Reports* 110(5):593-599.**

Employers are becoming increasingly concerned about the consequences and costs of substance use in their workplaces. Despite this heightened awareness, little information is available to guide them in setting up worksite-based prevention and assistance programs. Most estimates of the prevalence or consequences of substance use are derived from large national surveys of households or individual persons. The primary contribution of the research presented in this article to the public health literature is the empirical results from a unique data set. In particular, the authors present results of a survey administered to more than 1,200 employees at five different worksites. Descriptive statistics for the prevalence of smoking, alcohol and illicit drug use, prescription drug misuse, and workplace consequences, such as reduced performance and absenteeism, are reported, as well as findings from a multivariate analysis of substance use prevalence and consequences. Compared with national averages, workers at these five sites tended to have substance use profiles similar to or slightly lower than estimates from large national surveys. The study's estimates may help employers identify the extent of a substance abuse problem in their worksites and specific areas to target for possible intervention.

**Frone, M.R. 1998. "Predictors of Work Injuries Among Employed Adolescents." *Journal of Applied Psychology* 83(4):564-576.**

Predictors of work injuries were studied in a sample of employed adolescents. The 20 predictors comprise five general categories of risk factors: demographic, personality, employment, health, and substance use. Data were obtained from a sample of 319 individuals ages 16 to 19. Hierarchical regression analysis revealed that all five categories of risk factors were related to job injuries. The significant predictors of work injuries among adolescents were gender, negative affectivity, job tenure, exposure to physical hazards, excessive workloads, job boredom, poor physical health, and on-the-job substance use.

**Frone, M.R. 1999. "Work Stress and Alcohol Use." *Alcohol Research & Health* 23(4): 285-291.**

Employees who drink heavily or who abuse or are dependent on alcohol can undermine a workforce's overall health and productivity. To better understand the reasons behind employee abusive drinking and to develop more effective ways of preventing problem drinking in the workforce, researchers have developed a number of paradigms that guide their research. One such paradigm is the alienation/stress paradigm, which suggests that employee alcohol use may be a direct or indirect response to physical and psychosocial qualities of the work environment. Although in the alcohol literature, work alienation and work stress traditionally have been treated as separate paradigms, compelling reasons support subsuming the work-alienation paradigm under a general work-stress paradigm. Researchers have developed several models to explain the relationship between work stress and alcohol consumption: the simple cause-effect model, the mediation model, the moderation model, and the moderated

mediation model. Of these, the moderated mediation model particularly stands out, because it simultaneously addresses the two fundamental issues of how and when work stressors are related to alcohol use. Recent research supports a relation of work-related stressors to elevated alcohol consumption and problem drinking. Future research should focus on the relation between work stressors and alcohol use among adolescents and young adults, because they are just entering the workforce and are the most likely to engage in heavy drinking. Longitudinal studies also are needed to better explain the relation between work stress and alcohol use.

**Frone, M.R. 2000. "Interpersonal Conflict at Work and Psychological Outcomes: Testing a Model Among Young Workers." *Journal of Occupational Health Psychology* 5(2):246-255.**

On the basis of A.P. Fiske's (1992) general theory of social relations, a model of interpersonal conflict at work was developed and tested in a sample of young workers. The model predicts that conflict with supervisors is predictive of organizationally relevant psychological outcomes (job satisfaction, organizational commitment, and turnover intentions), whereas conflict with coworkers is predictive of personally relevant psychological outcomes (depression, self-esteem, and somatic symptoms). Data were obtained from a sample of 319 individuals ages 16 to 19 years. Structural equation modeling results supported the hypothesized relations. Secondary regression analysis of two data sets from Donovan, Drasgow, and Munson (1998) provides initial support for the generalizability of the hypothesized model to older employees.

**Frone, M.R. 2000. "Work-Family Conflict and Employee Psychiatric Disorders: The National Comorbidity Survey." *Journal of Applied Psychology* 85(6):888-895.**

This study examined the relation between work-family conflict and several types of psychiatric disorders: mood, anxiety, substance dependence, and substance abuse. Survey data were obtained from a representative national sample of 2,700 employed adults who were either married or the parent of a child 18 years old or younger. Hierarchical logistic regression analyses revealed that both work-to-family and family-to-work conflict were positively related to having a mood, anxiety, and substance dependence disorder. Depending on the type of work-family conflict and type of disorder, employees who reported experiencing work-family conflict often were 1.99–29.66 times more likely than were employees who reported no work-family conflict to experience a clinically significant mental health problem. No support was found for gender differences.

**Frone, M.R. 2003. "Predictors of Overall and On-the-Job Substance Use among Young Workers." *Journal of Occupational Health Psychology* 8(1):39-54.**

The author studied the predictors of overall and on-the-job substance (alcohol and marijuana) use in a sample of young workers. The 18 predictors represent six general domains of risk factors: demographic, personality, substance use outcome expectancies, workplace substance availability, workplace social control, and work stressors. Data were obtained from a sample of 319 individuals aged 16 to 19 years. Hierarchical regression analyses revealed that five of the six domains of risk factors were related to employee substance use. Similarities and differences were found in the predictors of overall and on-the-job substance use and in the predictors of alcohol and marijuana use.

**Frone, M.R., and M. Windle. 1997. "Job Dissatisfaction and Substance Use among Employed High School Students: The Moderating Influence of Active and Avoidant Coping Styles." *Substance Use & Misuse* 32(5):571-585.**

The authors extended prior stress-coping-substance use research among adolescents by examining the employment context. Specifically, their study examined the relation of job dissatisfaction to substance use and the potential moderating influence of active and avoidant coping styles. They obtained data from 446 employed high school students. Ordered-probit regression analyses revealed that job dissatisfaction is positively related to cigarette and alcohol use but not to illicit drug use. Coping styles did not moderate the relation between job dissatisfaction and substance use. Nonetheless, coping styles have significant main-effect relations to substance use. Active coping was negatively related and avoidant coping was positively related to both cigarette and alcohol use. Neither coping style was related to illicit drug use.

**Galaif, E.R., M.D. Newcomb, and J.V. Carmona. 2001. "Prospective Relationships Between Drug Problems and Work Adjustment in a Community Sample of Adults." *Journal of Applied Psychology* 86(2):337-350.**

The prospective relationships between drug problems and work adjustment (e.g., job instability, job satisfaction) were examined in a community sample of 470 adults. Polydrug problems (alcohol, marijuana, and cocaine problem drug use) were both predictors and consequences of work adjustment. In partial support of the impaired functioning theory, polydrug problems predicted reduced job satisfaction 4 years later. Supporting the work-related strain theory, early job instability predicted polydrug problems 4 years later. In support of the theory of general deviance, low social conformity predicted later job instability. Finally, bolstering social support theory, early support for drug problems reduced polydrug problems and increased job satisfaction 4 years later.

**Gillham, J.E., A.J. Shatté, and D.R. Freres. 2000. "Preventing Depression: A Review of Cognitive-Behavioral and Family Interventions." *Applied and Preventive Psychology* 9:63-88.**

Depression is one of the most common psychological disorders. It is associated with tremendous costs in terms of suffering, decrease in productivity, and loss of life. For many individuals, depression is a disorder that will recur throughout life. Recent findings suggest that the prevalence of depression is on the rise, particularly in young people. Clearly, depression prevention is an important goal. This article reviews research on interventions designed to prevent episodes and symptoms of unipolar depression in adults and children. This review focuses specifically on cognitive behavioral and family interventions, discusses what researchers have learned about the prevention of depression, and concludes with recommendations for future investigations.

**Glantz, M.D., and R.W. Pickens. 1992. "Vulnerability to Drug Abuse: Introduction and Overview." In *Vulnerability to Drug Abuse*, M.D. Glantz and R.W. Pickens, eds., pp. 1-14. Washington, DC: American Psychological Association.**

This book introduction offers an overview of current thinking about risk factors for substance abuse. Use of psychoactive substances is a fact of life; most adults have tried at least one psychoactive substance during their lifetimes. Efforts at all levels of government to curb illicit substance use can be effective, but in certain segments of the population (e.g., adolescents) the level of involvement with illicit substances has not changed much over time. The authors of this introduction are interested in users' vulnerability—why some people who use substances become abusers. Much of the early research on risk factors for abuse was marred by reliance on self-reports and a failure to examine the social and cultural context of substance abuse. There is no single "cause" of substance abuse—the factors that influence substance abuse are complex and varied, as are the pathways to abuse and the behavior patterns of abusers. The authors believe, however, that some of the risk factors that render an individual vulnerable to escalate from use to abuse are detectable before the individual tries drugs, and therefore preventable. Risk factors may be linked with various substances, so that, for example, an individual who is antisocial or transgressive will be less likely to abuse alcohol, which is available legally. Certain subgroups of the population may be more vulnerable to substance abuse, based on social and economic deprivation. Social attitudes, policies, economic conditions, and law-enforcement patterns contribute to the environment of substance abuse. Family history of drug abuse and certain psychopathologies (antisocial personality, conduct disorders, criminal behavior) also render individuals vulnerable to substance abuse. In general, substance use appears to be socially mediated (peer interactions) and abuse appears to be a function of biological or psychological processes. Two characteristics of substance use contribute strongly to the escalation to abuse: early age of first use and high-frequency use of substances.

**Greenberg, E.S., and L. Grunberg. 1995. "Work Alienation and Problem Alcohol Behavior." *Journal of Health and Social Behavior* 36(1):83-102.**

Using a sample of production workers from union, nonunion, producer cooperative, and employee stock ownership plan (ESOP) wood products mills in the Northwest, the authors tested the general proposition that work alienation, defined as low job autonomy, low use of capacities, and lack of participation in decision-making in the workplace, is associated with heavy drinking and negative consequences from drinking. The authors found that the general proposition is supported but that the pathways tend to be indirect rather than direct, mediated by feelings of job satisfaction and respondents' beliefs about the utility of drinking as a means of coping.

**Grunberg, L., S. Moore, R. Anderson-Connolly, and E. Greenberg. 1999. "Work Stress and Self-Reported Alcohol Use: The Moderating Role of Escapist Reasons for Drinking." *Journal of Occupational Health Psychology* 4(1):29-36.**

This study examines the moderating role of escapist reasons for drinking alcohol in the job stress/self-reported alcohol use and problems relationship. It was hypothesized that higher levels of job stress would be associated with higher levels of self-reported drinking and drinking

problems only for those who endorsed escapist reasons for drinking. For those who did not hold such beliefs, higher levels of job stress were predicted to be associated with lower self-reported alcohol intake and problems. Survey data from white- and blue-collar workers employed across all pay codes and positions were collected randomly at a large manufacturing organization (62 percent response rate). Participants responded to questions concerning work stress, reasons for drinking, alcohol intake, and alcohol problems. Using only nonabstainers with complete data (N = 1,645), results from regression analyses generally supported all hypotheses.

**Grunberg, L., S. Moore, and E.S. Greenberg. 1998. "Work Stress and Problem Alcohol Behavior: A Test of the Spillover Model." *Journal of Organizational Behavior* 19(5):487-502.**

Although previous research has found weak support for the model of stressful work "spilling over" to negative coping responses during nonwork hours, the authors argue that a variety of conceptual and methodological problems may partially explain the weak and inconsistent findings. Two important shortcomings are inadequately specified models and a failure to consider nonescapist responses to job-related stress. The authors therefore propose that there may be escapist (i.e., increased drinking, working through job dissatisfaction for those who believe that alcohol consumption is an effective means to reduce stress) and nonescapist (i.e., decreased drinking for those who are dissatisfied with their jobs but do not believe alcohol is an effective coping strategy) responses to work stress. These hypotheses were tested on a sample of 972 production workers in the Pacific Northwest. Results show moderate support for the existence of both escapist and nonescapist responses to job-related stresses.

**Hansen, D.M., and P.A. Jarvis. 2000. "Adolescent Employment and Psychosocial Outcomes: A Comparison of Two Employment Contexts." *Youth & Society* 31(4):417-436.**

The authors tested the theory that adolescents working in a family-owned business versus working in a private enterprise would report differences in variables commonly associated with part-time employment. Results indicated that working in a family business was associated with males' and females' reporting greater perceived parental support and males' reporting less drug and alcohol use. Findings were consistent with other research on the associations of hours worked with outcome variables.

**Harrison, P.A. 2001. "Predisposing Factors." In *Manual of Substance Abuse Treatment*. T.W. Estroff, ed., pp.13-33. Washington, DC: American Psychiatric Publishing.**

**Hartwell, T.D., P. Steele, M.T. French, F.J. Potter, N.F. Rodman, and G.A. Zarkin. 1996. "Aiding Troubled Employees: The Prevalence, Cost, and Characteristics of Employee Assistance Programs in the United States." *American Journal of Public Health* 86(6):804-808.**

Employee assistance programs (EAPs) are job-based programs designed to identify and assist troubled employees. The authors' study determined the prevalence, cost, and characteristics of these programs in the United States by worksite size, industry, and census region. To do so, the authors contacted a stratified national probability sample of more than 6,400 private,

nonagricultural U.S. worksites with 50 or more full-time employees, using a computer-assisted telephone interviewing protocol. More than 3,200 worksites responded and were eligible, with a response rate of 90 percent. Approximately 33 percent of all private, nonagricultural worksites with 50 or more full-time employees currently offer EAP services to their employees, an 8.9 percent increase over 1985. These programs are more likely to be found in larger worksites and in the communications/utilities/transportation industries. The most popular model is an external provider, and the median annual cost per eligible employee for internal and external programs was \$21.83 and 18.09, respectively. The authors concluded that EAPs are becoming a more prevalent point of access to health care for workers with personal problems such as substance abuse, family problems, or emotional distress.

**Hawkins, J.D., R.F. Catalano, and J.Y. Miller. 1992. "Risk and Protective Factors for Alcohol and Other Drug Problems in Adolescence and Early Adulthood: Implications for Substance Abuse Prevention." *Psychological Bulletin* 112(1):64-105.**

A risk-focused approach to drug abuse prevention holds promise for identifying effective prevention strategies. The following antecedents of adolescent drug use have been identified: favorable drug laws, availability of drugs, poverty, hyperactive or aggressive behavior, family history of or current family involvement with substance abuse, family conflict, insufficient family bonding, academic failure, lack of commitment to school, peer rejection, social pressures to use substances, alienation and rebelliousness, and early initiation of substance use. There is some evidence that positive protective factors (e.g., personal strengths, tight-knit family, strong social bond) can help offset these risk factors, but more research is needed to tease out the complex interaction of risk and protective factors. Studies of the development of adolescent substance abuse suggest that viable prevention should consist of addressing risk factors in a number of social domains during the developmental period when each becomes a factor in future substance use. To date, most prevention efforts aimed at teens have addressed two risk factors: laws and social norms favorable to drug use and social influences to use drugs. The former has resulted in interdiction and stronger legal penalties, the latter in resistance skills training. Training adolescents to resist the influence of peer pressure can produce short-term decreases in rates of drug initiation, including smoking, alcohol, and marijuana. The authors favor a multicomponent approach to prevention that accounts for multiple risk and protective factors.

**Heirich, M., and C.J. Sieck. 2000. "Worksite Cardiovascular Wellness Programs as a Route to Substance Abuse Prevention." *Journal of Occupational and Environmental Medicine* 42(1):47-56.**

This study addresses the question of worksites as an effective route to alcohol abuse prevention. The following hypotheses were tested: (1) cardiovascular disease risk reduction programs provide effective access for alcohol behavior change; (2) proactive outreach and follow-up have more impact on health behavior change than health education classes; (3) ongoing follow-up counseling produces the most behavior change; and (4) screening alone produces little change. The study population included 2,000 employees, recruited through cardiovascular disease health screening, who were randomly assigned to individual outreach or classes interventions. Changes in the organization of work required more visible outreach,

which produced demands for counseling services from many employees who were not in the original group targeted for outreach. After 3 years of intervention, rescreening results strongly supported hypotheses 1 and 2. Spillover effects from counseling produced plant-wide improvements so that hypotheses 3 and 4 were not confirmed. This demonstrates that highly visible outreach provides a cost-effective strategy for cardiovascular disease and alcohol prevention.

**Heirich, M., and C.J. Seick. 2003. "Helping At-Risk Drinkers Reduce Their Drinking: Cardiovascular Outreach at Work." In *Preventing Workplace Substance Abuse: Beyond Drug Testing to Wellness*, J.B. Bennett and W.E.K. Lehman, eds., pp. 135-164. Washington, DC: American Psychological Association.**

This chapter examines the Wellness Outreach at Work (WOW) programs—proactive health-promotion programs that focus on behavior change. Because Employee Assistance Programs (EAPs) often intervene too late and because starting healthy behaviors is easier than stopping bad ones, WOW reaches out actively to an entire workforce with education and social reinforcement for change. As a culture of healthy behaviors takes hold in a workplace, individuals' efforts at change are increasingly supported. At over 100 worksites over a 3-year period, over half of the employees with identified health risks actively worked to change their behaviors. This chapter examines whether alcohol abuse prevention can be incorporated successfully into existing WOW programs that focus on reducing cardiovascular health risks. Outreach and follow-up techniques that encourage health behavior change proved to be successful with people who abused alcohol. Individual counseling sessions were far more effective than group health education. High-visibility outreach counseling helped even workers who were not participating in the programs focus on health risks, as a general culture of healthy behavior pervaded one large worksite over the course of the 3-year study. The authors conclude that wellness programs devoted to cardiovascular health risks are a natural route for delivering alcohol education and prevention messages. The strongest advantage to embedding alcohol abuse prevention in a wellness program is that the overall health of the workforce improves, which results in cost savings and a subtle, positive change in the culture of the workplace.

**Hemmingsson, T., and I. Lundberg. 2001. "Development of Alcoholism: Interaction Between Heavy Adolescent Drinking and Later Low Sense of Control Over Work." *Alcohol & Alcoholism* 36(3):207-212.**

The combined effects of heavy use of alcohol in late adolescence and later unfavorable psychosocial work-environment may contribute to the development of alcoholism. Data on circumstances during childhood and adolescence, including alcohol use, history of police and/or childcare contacts, and emotional stability, were collected for 49,323 young men, born during the period 1949-1951, at the time of enlistment for compulsory military training in 1969 and 1970. On the basis of census data on occupation in 1975, all individuals were classified into groups with regard to the level of work-control (e.g., participation in decision making, variation in job task) in accordance with a job exposure matrix. The background of those men who acquired a diagnosis of alcoholism according to in-patient psychiatric care registers between 1976 and 1983 was examined in relation to their alcohol consumption in adolescence and the nature of their subsequent work environment. It was found that young men with heavy alcohol

consumption had an increased risk of developing alcoholism if they later worked in an environment characterized by low control. Quality of work duties and environment can have an impact on alcohol consumption; workers transfer lessons about low control and lack of responsibility from their jobs to their home lives. These findings were not due to selection of heavy drinkers into low control jobs. Similar results were obtained when data from blue-collar workers were analyzed separately.

**Hemmingsson, T., and I. Lundberg. 1998. "Work Control, Work Demands, and Work Social Support in Relation to Alcoholism among Young Men." *Alcoholism, Clinical and Experimental Research* 22(4):921-927.**

Low work control, low job demands, and low workplace social support were found to be related to later alcoholism. A combination of low demands and low control, what might be called a "passive" work environment, was related to an increased relative risk of psychiatric alcoholism diagnosis after controlling for relevant background factors. Low work control, in particular in combination with low work demands, and low work social support are related to later alcoholism even after controlling for previously known risk factors (including risk use of alcohol). Results suggest that young men may respond to an undemanding occupational environment by increasing their alcohol consumption.

**Hersch, R.K., and R.F. Cook. 2000. "Workplace Substance Abuse Prevention." *Prevention Pipeline* 13(3):4-7.**

The authors examined the workplace as a unique location for providing substance abuse prevention information. They cite a recent National Household Survey on Drug Abuse, which found that nearly 70 percent of current illegal drug users and 77 percent of all heavy drinkers were employed full-time. The workplace is a unique setting for prevention information because it comprises personal, social, and economic forces affecting a person's life, because employer costs associated with employee substance abuse are a considerable burden, and because it provides a channel for providing prevention information to parents concerning their children. The authors describe historical approaches to employee substance abuse, such as Employee Assistance Programs (EAPs) and drug testing. However, these strategies address substance abuse detection and intervention, rather than prevention. As a result, the authors present and discuss two universal prevention strategies: (1) those that focus on the work culture or work environment and (2) those that focus on individual employees by integrating substance abuse prevention into workplace health promotion or other established workplace programs. The authors then describe a series of substance abuse prevention programs developed by their company that are based on a health promotion model of change. Their research and subsequent programs are funded by the Center for Substance Abuse Prevention (CSAP). Program materials include health promotion classes with substance abuse prevention messages, health promotion and substance abuse prevention mailings, enhanced EAP services and supervisor training, and a promotional campaign designed to increase awareness about health promotion and substance abuse prevention. The authors' preliminary research indicates that health promotion-oriented substance abuse prevention programs have an effect on employee health and medical claims.

**Hersch, R.K., R.F. Cook, and D.K. Deitz. 2000. "Methodological Issues in Workplace Substance Abuse Prevention." *Journal of Behavioral Health Services & Research* 27(2):144-151.**

Substance abuse among working adults represents billions of dollars in preventable health care cost and industry financial losses. Therefore, it is imperative to develop and test effective substance abuse prevention programs for the workplace. The major workplace substance abuse interventions—Employee Assistance Programs (EAPs)—do not engage primarily in prevention but in treatment. This is due, in part, to the fact that obtaining useful data on effective substance abuse prevention strategies in the workplace is fraught with numerous methodological challenges. This study highlights a number of these challenges: (1) reaching a broad audience with prevention messages, (2) handling the concerns of the employer, (3) collecting substance abuse data in the workplace, (4) accessing and using records-based data, and (5) linking survey and records-based data. If these challenges can be overcome, the data obtained must allow researchers to assess changes on the individual level of employee attitudes and behavior as well as on the institutional level of turnover, absenteeism, and health care utilization and costs.

**Hersch, R.K., T.L. McPherson, and R.F. Cook. 2002. "Substance Use in the Construction Industry: A Comparison of Assessment Methods." *Substance Use & Misuse* 37(11):1331-1358.**

Most users of illicit drugs are employed adults, with substance use rates especially high in the construction industry. In an effort to shed light on the nature and extent of drug use among construction industry workers, and to compare drug use assessment methods, substance use among construction workers (60 percent of whom were apprentices) across six sites was assessed by questionnaire, urinalysis, and hair analysis. Nearly 17 percent of the participants reported current drug use, although drug use differed dramatically by site. Drug use rates also differed by respondent characteristics, participation rates, and assessment method. The strengths and weaknesses of each assessment method are discussed, along with the rationale for combining methods.

**Hoffman, J.P., C. Larison, and A. Sanderson. 1997. "An Analysis of Worker Drug Use and Workplace Policies and Programs." Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.**

This report uses information from the National Household Survey on Drug Abuse (NHSDA) to examine issues involving illicit drug and heavy alcohol use among U.S. workers and workplace policies that address drug and alcohol use. The 1994 NHSDA included questions about various work-related outcomes (e.g., missing work, being fired, workplace accidents), occupation, establishment size, whether respondents had been provided with information at their workplace regarding use of alcohol or drugs, written policies and Employee Assistance Programs (EAPs) for workers with drug or alcohol problems, and the use of drug testing and employees' perceptions about it. In people aged 18 to 49 years, 8 percent of full-time workers, 9 percent of part-time workers, and 16 percent of unemployed persons reported illicit drug use, but 70 percent of those reporting illicit drug use were employed full time. Rates of illicit drug use were higher among 18- to 25-year-olds than among older workers, and higher among those making

less than \$9,000 or more than \$75,000 per year than among those making between \$9,000 and \$75,000 per year. Construction workers, handlers, helpers, precision production and repair workers, food preparers, wait-staff, and bartenders reported highest rates of illicit drug use; protective service workers reported the lowest rates of illicit drug use. Drug testing and EAPs were both more prevalent in companies with more than 500 employees.

**Hopfer, C.J., M.C. Stallings, J.K. Hewitt, and T.J. Crowley. 2003. "Family Transmission of Marijuana Use, Abuse, and Dependence." *Journal of the American Academy of Child & Adolescent Psychiatry* 42(7):834-841.**

This study examines the familial aggregation of marijuana use, abuse, and dependence. Adolescents recruited from residential and day treatment programs for youth with conduct and substance problems, matched controls, and all available family members were interviewed with structured research instruments. A total of 2,546 individuals from 781 families were interviewed. Risk ratios of relatives of clinical cases were calculated, compared with controls, for marijuana use, abuse, or dependence. Spousal, parent-offspring, and sibling correlations and the proportion of variance attributable to parent-offspring transmission were estimated using structural equation modeling. For all three measures, the risk ratios were elevated in the family members of clinical probands, with estimates ranging from 1.5 to 3.3. Spousal correlations ranged from 0.33 to 0.70. Parent-offspring correlations ranged from 0.17 to 0.30. Sibling correlations ranged from 0.34 to 0.44. The proportion of variance attributable to factors transmitted from parents to children ranged between 25 percent and 44 percent. Familial aggregation of marijuana use, abuse, and dependence is present for all three measures. Results suggest significant parent-offspring transmission of risk, sibling environmental influences, and assortative mating for all three levels of marijuana use.

**Johnston, L.D., P.M. O'Malley, and J.G. Bachman. 2003. *Monitoring the Future National Results on Adolescent Drug Use: Overview of Key Findings, 2002*. NIH Publication No. 03-5374. Bethesda, MD: National Institute on Drug Abuse.**

Since 1975, Monitoring the Future has been studying substance abuse in American adolescents, college students, and adults through age 40. This publication reports early results from the 2002 nationwide survey of eighth, tenth, and twelfth grade students. In addition to extensive data on substance use, this publication also reports students' attitudes about substance use, including which substances have a "great risk" associated with use, to what extent individual substances are disapproved of, and the ease with which individual substances can be obtained. Over half of American young people have tried an illicit substance by the time they finish high school; 30 percent of students have tried an illicit substance other than marijuana. If inhalants are included, nearly one-third of students have sampled an illicit substance as early as eighth grade. These figures parallel those for cigarette use: 57 percent of high school seniors have tried cigarettes, and nearly one-third of eighth graders have tried cigarettes. Over three-quarters of students have consumed alcohol by the end of high school; nearly half have done so by eighth grade. Sixty-two percent of twelfth graders have been drunk at least once.

**Johnstone, B.M. 1994. "Sociodemographic, Environmental, and Cultural Influences on Adolescent Drinking Behavior." In *The Development of Alcohol Problems: Exploring the Biopsychosocial Matrix of Risk*, NIAAA Monograph No. 26, R. Zucker, G. Boyd, and J. Howard, eds., pp. 169-204. Rockville, MD: U.S. Department of Health and Human Services.**

This chapter reviews recent research on sociodemographic, environmental, and cultural influences on adolescent alcohol use. Although the author notes that there is a significant degree of consonance across research into sociodemographic predictors of alcohol use, he cautions against facile interpretation of results, especially with respect to ethnicity. Age is a powerful predictor of alcohol use; first use, rate of heavy alcohol use, and alcohol-related problems all increase with age during adolescence. Male adolescents are more likely than females to drink, to drink heavily, and to experience alcohol-related problems. Increasing religious commitment is associated with increasing abstinence from drinking. The effects of socioeconomic status on drinking in adolescents remain unclear and may be indirect or mediated by other characteristics. Environmental factors that are reviewed include societal level of alcohol consumption (individual consumption drops when societal consumption is thought to be dropping), rural/urban location (regional differences in alcohol consumption appear to be waning), and situational determinants of drinking behavior (teens drink more heavily when they are around heavy-drinking peers). The author reviews research on five different ways that culture affects drinking behavior in adolescents: cultural expectations for alcohol to play a role in the transition to adulthood, cultural beliefs about the role of alcohol in dealing with stress or establishing adulthood, normative cultural boundaries defining who can drink and when, cultural rituals that are part of families and peer groups and may bolster or discourage alcohol misuse, and significant historical events (poverty, war) that may help shape attitudes toward alcohol consumption. Although significant effort has been devoted to studying individual attributes (parents, race, gender, age) in relation to alcohol use, relatively little attention has been paid to more complex questions of how sociodemographic attributes interact with environmental and cultural factors.

**Jones, E.R., and G.S. Brown. 2003. "Behavioral Health Care: A Worthwhile Investment?" *Employee Benefit Plan Review* 58(2):13-14.**

The authors argue that if employers truly understood the impact on the bottom line of behavioral disorders such as substance use and depression, they would seek out the managed behavioral healthcare organization (MBHO) with the highest improvement rate, not necessarily the cheapest one. Depression accounts for an estimated \$24 billion a year in losses; substance abuse accounts for \$100 billion in losses. One MBHO found that over a 4-year period, 31 percent of the employees accessing services met criteria for being work impaired. After 3 weeks of behavioral healthcare, the number of work-impaired employees was 18 percent; after 9 weeks of care, the number of employees was cut in half (15 percent). If losses from depression and substance use can be reduced substantially, behavioral healthcare services would rank as one of the most worthwhile investments a company could make.

**Kandel, D.B. 1984. "Marijuana Users in Young Adulthood." *Archives of General Psychiatry* 41(2):200-209.**

Striking differences appeared among 1,325 young adults aged 24 to 25 years depending on their marijuana use. Differences increased with involvement, although no threshold appeared at any particular level. Marijuana users were characterized by higher use of other substances, membership in networks of marijuana users, lower participation and greater instability in conventional roles of adulthood, history of psychiatric hospitalization and lower psychological well-being, and participation in deviant activities. Involvement with marijuana-using friends and use by a spouse or partner, as well as use of other illicit drugs, were important predictors of current marijuana involvement. In young adulthood, as in adolescence, marijuana use is embedded in a social context favorable to its use and is associated with disaffection from social institutions. The social and psychological correlates of marijuana use are similar in young adulthood and adolescence and have remained unchanged over the last decade.

**Kandel, D.B. 1996. "The Parental and Peer Contexts of Adolescent Deviance: An Algebra of Interpersonal Influences." *Journal of Drug Issues* 26(2):289-315.**

Estimates of the relative influence of peers and parents on adolescents' drug use and other forms of deviance have inflated the importance of peers and underestimated the influence of parents. Following a brief review of major findings in research on parental-peer linkages, sources of distortion and overestimation in peer effects are identified: reliance on cross-sectional designs, which confound selection and socialization effects; reliance on perceptual reports of friends' behaviors, which reflect projection and attribution; failure to take into account parental contributions to children's peer selection; and failure to consider genetic contribution to observed parental effects. Selected empirical studies that have estimated peer and parental effects on drug use and delinquency from relational and longitudinal designs are used to develop correction factors. These are incorporated in equations designed to estimate biases in peer estimates and the effects of parental contributions to peer selection. Within the limitations of the available data, this study concludes that peer effects based on cross-sectional data and perceptions of peer behavior are overestimated at least by a factor of five.

**Kandel, D.B., and K. Chen. 2000. "Types of Marijuana Users by Longitudinal Course." *Journal of Studies on Alcohol* 61(3):367-378.**

Taxonomies of alcoholism and antisocial behaviors based on developmental course converge on two-group classifications that emphasize early and late onset. Typologies for users of illicit drugs remain to be developed. This article proposes a developmental taxonomy of marijuana users. Cluster analysis was applied to a representative community sample of 708 (364 male, 344 female) marijuana users followed from adolescence to age 34-35. The Ward method, followed by relocation, was used to classify marijuana users into different types based on age of onset, chronicity of heavy use, and persistence of use. ANOVA and logit analyses were used to describe the cluster solution and examine the correlates of cluster membership. Four marijuana use clusters were identified: early onset-heavy use, early onset-light use, mid onset-heavy use and late onset-light use. The groups differed from each other in degree of involvement in marijuana and other drugs and sociodemographic and lifestyle characteristics. The majority of those with early onset did not become heavily involved in marijuana. Unique factors were

associated with membership in each group. Factors differentiating early from mid-onset heavy use included association with marijuana-using peers and having had a mental disorder. Peer delinquency was an additional factor differentiating early initiators who became heavy users from those who did not. A simple two-type classification fails to take into account the heterogeneity of early and late onset groups. By itself, early onset into marijuana will not lead to problematic use or rapid progression into the use of other drugs. Motivation underlying use and dysfunctional behaviors are associated with the development of problematic drug use and dependence.

**Kandel, D.B., and M. Davies. 1996. "High School Students Who Use Crack and Other Drugs." *Archives of General Psychiatry* 53(1):71-80.**

When it appeared in the 1980s, crack was thought to represent a completely new pathway of entry into drug use. The objective of this study was to identify the distinguishing characteristics of adolescents who have reached different stages of drug use, in particular the highest state represented by crack. Adolescents (N = 7611) representative of students in grades 7 to 12 from 53 New York State schools were classified in the following six mutually exclusive, cumulative categories of drug use: nonusers, alcohol and/or cigarette users only, marijuana users only, users of illicit drugs other than marijuana but neither cocaine nor crack, cocaine but not crack users, and crack users. The groups were compared in level of psychosocial functioning. Students who use illicit drugs show deficits in school performance, quality of family relationships, and health and increased psychological symptoms. Compared with nonusers, they are more delinquent and more actively involved with their peers and live in social environments in which the perceived use of drugs by other adolescents and parents is more extensive. Delinquency and extent of perceived drug use consistently increase with each higher stage of use. Crack users exhibit the lowest level of psychosocial functioning of any drug-using group. There are stage-specific characteristics and common characteristics (delinquent participation, peer drug use) throughout the developmental sequence of drug use. Despite declines over the past two decades in the prevalence of the use of different drugs, young people who use drugs display characteristics over historical time similar to those of young drug users 20 years ago.

**Kandel, D.B., and K. Yamaguchi. 1987. "Job Mobility and Drug Use: An Event History Analysis." *American Journal of Sociology* 92(4):836-878.**

Life and drug histories collected in a longitudinal cohort of young adults aged 24-25 are analyzed to specify the dynamic relationships between patterns of drug use and job separations. Three patterns of drug use are investigated: daily alcohol use, monthly use of marijuana, and monthly use of other illicit drugs. Job changes followed immediately by another job are distinguished from job losses not followed by new employment within a month. Two processes assumed to underlie the relationship between drug use and job mobility are distinguished: selection, in which individual predispositions account for self-selection into job separation, and causation, which reflects the specific effects of drug use on job separation. Drug use has a strong effect on job separation, which appears to be mainly a selection effect. Results document the importance of drug use in predicting high job mobility and subsequent unemployment in late adolescence and early adulthood. The neglect of this lifestyle factor in

prior analyses has led to overestimations of the negative effects of job duration and marital status and the positive effect of prior experience of a job separation on future separations.

**Kandel, D.B., and K. Yamaguchi. 1993. "From Beer to Crack: Developmental Patterns of Drug Involvement." *American Journal of Public Health* 83(6):851-855.**

Prior research has identified developmental stages in drug use in adolescence, from substances that are legal for adults to illicit drugs. The position of crack in patterns of drug involvement remains to be established. The analyses are based on a sample (n = 1108) representative of twelfth graders attending New York State public and private schools. From reported ages of first use of five classes of drugs (alcoholic beverages, cigarettes, marijuana, cocaine but not crack, crack), alternate models of progression were tested for their goodness of fit through log-linear models. The sequence involves at the earliest stage the use of at least one licit drug, alcohol or cigarettes. Subsequent stages involve marijuana and cocaine; crack is the last drug in the sequence. The results confirm the more important role of alcohol among males and cigarettes among females in the progression into various drug classes. Age of first drug use at a lower stage is a strong predictor of further progression. The developmental pattern of drug involvement identified in the early 1970s still characterizes adolescent pathways of drug involvement in the late 1980s.

**Kandel, D.B., K. Chen, and A. Gill. 1995. "The Impact of Drug Use on Earnings: A Life-Span Perspective." *Social Forces* 74(1):243-270.**

Cross-sectional and longitudinal causal analyses were carried out on a longitudinal cohort of employed adult males (N = 400) to investigate the relationship between various forms of drug use and earnings. By age 35, there are no cumulative effects of the use of illicit drugs on wages. Specification of the relationships at various stages of the life cycle reveals that the effects of illicit drug use are positive in the early stages of labor force participation (by the late twenties) but negative in later stages (by the mid-thirties). The negative impact of drug use on earnings appears to take more than a decade to manifest itself and is reflected in lower rates of earnings growth. The authors propose that a labor market theory of life-cycle compensation contracts and investments in training and the differential impact that different types of job changes have in the short and the long run among users and nonusers provide a partial accounting of the processes underlying the observed opposite relationship between drug use and earnings at different age periods. The importance of adopting a life-span perspective is highlighted by these findings.

**Kandel, D.B., M. Davies, D. Karus, and K. Yamaguchi. 1986. "The Consequences in Young Adulthood of Adolescent Drug Involvement. An Overview." *Archives of General Psychiatry* 43(8):746-754.**

To examine the consequences of adolescent drug use on the psychosocial and health functioning of young adults, the authors followed up 1,004 young men and women from age 15 or 16 years to age 25 years. The use of four different classes of drugs was examined: cigarettes, alcohol, marijuana, and other illicit drugs. Twenty outcomes were examined, including continuity of participation in work and in family roles, level of education, delinquent activities, self-reported health and psychological symptoms, and use of five drug classes in early adulthood (including prescribed psychoactive medications). The effects of marijuana and

of other illicit drugs could not be disentangled, so these drugs were treated as a single class. Controlling for initial individual differences in adolescence, use of the three major drug classes between adolescence and early adulthood affected most of the outcomes examined, most strongly continued use of the same substance. Unique drug effects included those of illicit drugs on increased delinquency, unemployment, divorce, and abortions, and of cigarettes on lowered psychological mood, illicit drugs predicted drug-related health problems, whereas cigarette use predicted increased breathing difficulties.

**Kandel, D.B., R.C. Kessler, and R.Z. Margulies. 1978. "Antecedents of Adolescent Initiation into Stages of Drug Use: A Developmental Analysis." *Journal of Youth and Adolescence* 7(1):13-40.**

The social psychological antecedents of entry into three sequential stages of adolescent drug use—hard liquor, marijuana, and other illicit drugs—are examined in a cohort of high school students in which the population at risk for initiation into each stage could be clearly specified. The analyses are based on a two-wave panel sample of New York State public secondary students and subsamples of matched adolescent–parent and adolescent–best school friend dyads. Each of four clusters of predictor variables—parental influences, peer influences, adolescent involvement in various behaviors, and adolescent beliefs and values—and single predictors within each cluster assume differential importance for each stage of drug behavior. Prior involvement in a variety of activities, such as minor delinquency and use of cigarettes, beer, and wine, are not important for hard liquor use. Adolescents' beliefs and values favorable to the use of marijuana and association with marijuana-using peers are the strongest predictors of initiation into marijuana. Poor relations with parents, feelings of depression, and exposure to drug-using peers are most important for initiation into illicit drugs other than marijuana.

**Kaplan, H.B., and X. Lui. 1994. "A Longitudinal Analysis of Mediating Variables in the Drug Use-Dropping Out Relationship." *Criminology* 32(3):415-439.**

The authors estimated the temporal relationships between illicit drug use and dropping out of school, and the variables that mediate these relationships, using theoretically informed models. They tested 2,805 students in the seventh grade (Time 1), in the eighth grade (Time 2), and during young adulthood (Time 3). The authors found that Time 1 drug use had a significant effect on not graduating from high school (measured at Time 3), controlling for gender, father's education, race/ethnicity, and Time 1 measures of deviance, distress, self-control, and grades. This effect was decomposed by the addition of three hypothesized mediating variables in the relationships: Time 2 measures of low motivation, negative social sanctions, and premature performance of competing social roles. The addition of Time 1 measures of these variables did not obviate the relationship, but the addition of Time 2 measures of the three hypothesized mediating variables to the equation reduced to nonsignificance the effect of drug use on not graduating from high school.

**Karuntzos, G.T., L.J. Dunlap, and G.A. Zarkin. 1998. "Designing an Employee Assistance Program (EAP) Intervention for Women and Minorities: Lessons from the Rockford EAP Study." *Employee Assistance Quarterly* 14(1):49-67.**

The authors described an enhanced Employee Assistance Program (EAP) intervention implemented through a large, community-based not-for-profit EAP located in Rockford, Illinois,

approximately 90 miles northwest of Chicago. The enhanced intervention builds on the existing EAP services and is designed to effectively reach employees with alcohol-related problems and specifically meet the special needs of women and racial/ethnic minority workers. The intervention components were developed to address significant gaps in the EAP's standard services for these populations. The intervention components include specialized EAP counselors, in-house training of EAP staff, a standardized alcohol screener, enhanced worksite supervisor training, community linkages, enhanced outreach materials, worksite orientation sessions, targeted outreach seminars, and contracted interpreters. The authors described the development and implementation phases of the research protocol. They explained that subsequent research will evaluate the effectiveness and cost-effectiveness of the intervention.

**Komro, K.A., and T.L. Toomey. 2002. "Strategies to Prevent Underage Drinking." Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism.**

Alcohol use by underage drinkers is a persistent public health problem; alcohol is the most commonly used substance among adolescents. Accordingly, numerous approaches have been developed and studied that aim to prevent underage drinking. This article provides data on underage drinking, discusses the causes of the behavior, and surveys various approaches to address the problem. Some approaches are school based, involving curricula targeted at preventing alcohol, tobacco, or marijuana use. Other approaches are extracurricular, offering activities outside of school in the form of social or life skills training or alternative activities. Other strategies strive to involve the adolescents' families in the prevention programs. Policy strategies also have been implemented that have increased the minimum legal drinking age, reduced the commercial and social access of adolescents to alcohol, and reduced the economic availability of alcohol. Approaches involving the entire community also have been employed. Several programs (e.g., the Midwestern Prevention Project and Project Northland) have combined many of these strategies. Adolescent alcohol use is a difficult behavior to change because alcohol consumption is so ingrained in U.S. culture and in everyday life. Given the pervasiveness of positive messages about drinking in U.S. culture, comprehensive, multifaceted approaches to underage drinking may stand the best chances of success.

**Komro, K.A., C.L. Perry, D.M. Murray, S. Veblen-Mortenson, C.L. Williams, and P.S. Anstine. 1996. "Peer-Planned Social Activities for Preventing Alcohol Use among Young Adolescents." *Journal of School Health* 66(9):328-334.**

The Project Northland peer participation program tested the feasibility of involving students in the planning and promotion of alcohol-free social activities for their peers and to determine whether such participation was associated with reduced alcohol use. The peer program was offered in 20 northeastern Minnesota schools when the study cohort was in seventh grade; students completed a survey in the beginning of sixth grade and at the end of sixth grade and seventh grade. Nearly 50 percent of the study cohort participated in the program. At the end of seventh grade, after controlling for confounders, an association was observed between student involvement with planning activities and a lower rate of alcohol use. This association was strongest among students who had reported alcohol use at the beginning of sixth grade. This cohort study suggests adolescent involvement in planning their own alcohol-free activities may be an efficacious strategy to prevent or reduce the prevalence of alcohol use among youth. Future studies are warranted to evaluate this association using experimental research designs.

**Kouvonen, A., and T. Lintonen. 2002. "Adolescent Work and Drug Experiments."  
*Journal of Substance Abuse* 7:85-92.**

The aim was to examine the relationship between part-time work and experimentation with drugs among Finnish adolescents. Cross-sectional survey data (School Health Promotion Survey, n = 47,568) were collected in classrooms in spring 2000. Respondents were between 14.3 and 16.2 years old. The response rate was 82 percent. Drug use during the past 30 days, work intensity, and work type measures were obtained from self-administered questionnaires. Polychotomous logistic regression was used as the main method of analysis. Working more than 10 hours per week was associated with an increased likelihood of frequent drug use (five times or more) but not of occasional experiments. Similarly, engagement in some types of "adult-like" work was significantly associated with an increased likelihood of frequent drug use.

**Kouvonen, A., and T. Lintonen. 2002. "Adolescent Part-Time Work and Heavy Drinking in Finland." *Addiction* 97(3):311-318.**

The authors examined the relationship between part-time work and heavy drinking among Finnish adolescents. Cross-sectional survey data were collected in classrooms in 2000. Finnish lower-level secondary students (n = 47,568) from the eighth and ninth grades, aged 14-16, were surveyed; the response rate was 8.2 percent. The authors measured work intensity, work type, and the frequency of heavy drinking, as obtained from self-administered questionnaires. The relationship between work and heavy drinking was studied using polychotomous logistic regression models. Compared with nonworkers, adolescents working more than 10 hours per week had an increased risk of heavy drinking, and also the frequency of heavy drinking was connected with this intensive working. When gender, grade level, parental education, parents' employment status, family structure, economic situation of the family, degree of urbanization, parental control, steady dating, GPA, and disposable allowance were adjusted for, the odds of weekly drunkenness were almost three times the odds of not reporting drunkenness among intensive workers compared with non-workers. When adjusted for other factors, some typical children's jobs marginally decreased a likelihood of heavy drinking. The authors concluded that work does not seem to protect adolescents from heavy drinking. Although many relevant factors were controlled for the effect may, however, be mediated through factors not covered in the survey. Therefore, they state, further clarification of the causal chains linking adolescent working and drinking is needed.

**Kumar, R., P.M. O'Malley, L.D. Johnston, J.E. Schulenberg, and J.G. Bachman. 2002. "Effects of School-Level Norms on Student Substance Use." *Prevention Science* 3(2):105-124.**

The authors examined the relationship between school norms of substance use disapproval (disapproval by the student body) and students' use of cigarettes, alcohol, and marijuana. Data came from nationally representative samples of eighth, tenth, and twelfth grade students, attending 150, 140, and 142 schools, respectively. These students participated in the Monitoring the Future Project in 1999. Measures of school norms of disapproval of substance use were obtained by aggregating students' personal disapproval of daily cigarette use, heavy drinking, and marijuana use within each school. Analysis using logistic nonlinear hierarchical models indicated that, in general, school-level disapproval lowered the probability of students'

use of these substances, controlling for their own disapproval and for student and school demographic characteristics. The beneficial effect of school-level disapproval of cigarette and marijuana use on eighth-grade students' probability of daily cigarette use and marijuana use was significantly higher than it was for twelfth-grade students. The effect of school-level disapproval of heavy drinking on the probability of students' drinking was not significantly different across the three grades. A school environment of disapproval was also found to create a protective environment for those students in the eighth and tenth grades who were themselves not disapproving of daily cigarette use. These results argue for prevention programs that include creation of an overarching environment of disapproval of substance use in schools.

**Kung, E. M., and A.D. Farrell. 2000. "The Role of Parents and Peers in Early Adolescent Substance Use: An Examination of Mediating and Moderating Effects." *Journal of Child and Family Studies* 9(4):509-528.**

The authors examined several models representing the relations among parenting practices, family structure, peer pressure, and drug use in a sample of 443 seventh graders. The setting was an urban school system serving a high percentage of African-American students from low-income families. Analyses using structural equation modeling supported a mediation model in which both peer pressure and parenting practices had direct effects on drug use, with peer pressure mediating the influence of parenting. Within this model, family structure had a significant direct effect on parenting; however, contrary to hypotheses, children from two-parent families were more likely to report that they received adequate parenting than were children from single-parent extended families. Peer pressure was more highly related to drug use for girls than for boys, and the relation between parenting and peer pressure was stronger for boys. Examination of a model that included moderator effects revealed that the relation between peer pressure and drug use increased as a function of poor parenting. Results of the study underscore the importance of drug prevention efforts focuses on parenting practices.

**Lapan, R.T., B. Tucker, S.-K. Kim, and J.F. Kosciulek. 2003. "Preparing Rural Adolescents for Post-High School Transitions." *Journal of Counseling and Development* 81(3):329-342.**

The authors evaluated the impact of four career development curricular strategies and emotional/instrumental support in preparing rural adolescents to make successful post-high school transitions. Curriculum strategies and perceived support helped eighth-, tenth-, and twelfth-grade students attain critical aspects of career development, enhanced student satisfaction that their education was better preparing them to achieve future educational and career goals, and increased student intentions to enter post-high school settings that required greater levels of education and training. Girls reported earning higher grades and participating in more work-based learning activities and intended to enter post-high school training settings that required more education than did boys.

**Laurent, J., S.J. Catanzaro, and M.K. Callan. 1997. "Stress, Alcohol-Related Expectancies and Coping Preferences: A Replication of the Cooper et al. (1992) Model." *Journal of Studies on Alcohol* 58(6):644-651.**

The present study attempted to replicate with adolescents the stressor vulnerability model of adult drinking proposed by Cooper et al. (1992) (see abstract elsewhere in annotated list). The Cooper et al. model simultaneously assesses the stress-moderating effects of gender, expectancies, and coping on alcohol use and abuse. Adolescents in grades 7 through 12 (N = 184, 59 percent female) completed the Alcohol Expectancy Questionnaire-Adolescent form, the COPE, the Adolescent Perceived Events Scale, and the Drinking to Cope scale. The pattern of results was very similar to those of earlier studies using adults or undergraduates. Generally, positive expectancies for alcohol, an avoidant coping preference, and stress were predictive of drinking to cope, alcohol use, and alcohol-related problems. A number of two-way interactions were also reported. Although gender did not play a prominent role in prediction, as it typically does with adults, grade was a significant predictor; older students reported more alcohol use and alcohol-related problems than younger students. Results support the utility of the stressor vulnerability model for understanding alcohol use among adolescents.

**Lecci, L., M.G. MacLean, and N. Croteau. 2002. "Personal Goals as Predictors of College Student Drinking Motives, Alcohol Use, and Related Problems." *Journal of Studies on Alcohol* 63(5):620-630.**

Although there has been extensive research examining drinking motives, relatively little of that research has focused on those factors that might underlie drinking motives. The present study examines whether non-alcohol-related motives (personal goals) can predict drinking motives, self-reported drinking, and alcohol-related problems in a college student sample. For an experiment on "attitudes and drinking," 290 volunteer undergraduate students (169 women and 121 men) completed measures of daily goal functioning (Personal Projects Analysis), drinking motives (Drinking Motives Questionnaire), frequency and quantity of alcohol consumed, and alcohol-related problems (Drinkers Inventory of Consequences). Using path analysis, it was found that non-alcohol-related goals serve as significant distal predictors of alcohol-related problems, with their effects almost entirely mediated by drinking motives and/or drinking level. Perceptions of life goals involving goal self-efficacy, meaningfulness, and social support appear to be significant protective factors, and goal-related distress is a significant risk factor. The present study extends previous research by focusing on a more idiographic, personally meaningful manifestation of motivation through the evaluation of non-alcohol-related personal goals. The daily pursuits of college students were shown to be predictive of drinking and drinking-related problems, especially as mediated through drinking motives. Findings suggest that several goal mechanisms could be considered for their potential role in improving interventions.

**Lehman, W.E.K., and J.B. Bennett. 2002. "Job Risk and Employee Substance Abuse: The Influence of Personal Background and Work Environment Factors." *American Journal of Drug and Alcohol Abuse* 28(2):263-286.**

Previous studies have noted that employees who work in jobs with physical risk report more substance use than employees working in nonrisky jobs. This study examined the extent to

which this relationship could be explained by personal background, specifically general deviance or psychosocial functioning, or work characteristics, including job stressors, organizational bonding, or work group drinking climate. Results from two worksites (ns = 943, 923) indicated that the relationship of job risk and alcohol problems could be fully explained by personal characteristics, particularly deviant behavior styles. Interaction effects were also found. Employees with more deviance indicators were particularly susceptible to recent drug use and problem drinking when they worked in drinking climates or were exposed to coworker drinking. These results suggest the joint influence of personal and job factors and support prevention programs that target the workplace social environment.

**Lehman, W.E.K., and D.D. Simpson. 1992. "Employee Substance Use and On-the-Job Behaviors." *Journal of Applied Psychology* 77:309-321.**

Substance use and job behaviors were assessed in a sample of municipal employees from a large city in the southwestern United States. Job behaviors included psychological and physical withdrawal, positive work behaviors, and antagonistic work behaviors. Employees who reported substance use at or away from work were found to more frequently engage in withdrawal activities and antagonistic work behaviors than did nonusers, although users and nonusers did not differ on positive work behaviors. The authors tested hierarchical regression models to determine whether substance use contributed unique variance to the prediction of job behaviors after they controlled for variance associated with personal and job background domains. Substance use added unique variance to the prediction of psychological and physical withdrawal behaviors but not to positive or antagonistic work behaviors.

**Lennox, R.D., P.D. Steele, G.A. Zarkin, and J.W. Bray. 1998. "The Differential Effects of Alcohol Consumption and Dependence on Adverse Alcohol-Related Consequences: Implications for the Workforce." *Drug and Alcohol Dependence* 50(3):211-220.**

Previous literature has supported the hypothesis that high rates of alcohol consumption are associated with adverse social consequences and that dependence on alcohol has an effect on that relationship. The purpose of this paper is to further specify the alcohol consumption–adverse consequences linkage by developing and estimating a latent variable model that incorporates the mediating effects of loss of control over alcohol consumption. This model is applied to measures for three alcohol-related constructs—consumption, loss of control, and adverse consequences—incorporated in the 1991 National Household Survey on Drug Abuse, for members of the primary workforce in the United States. The research suggests that workplace decision makers attempting to minimize the adverse workplace consequences of alcohol abuse should implement procedures that assess and respond to alcohol dependency rather than relying exclusively on detection of and intervention with alcohol consumption per se.

**Lerner, R.M., C. Brentano, and E.M. Dowling. 2002. "Positive Youth Development: Thriving as the Basis of Personhood and Civil Society." *New Directions for Youth Development* 95:11-33.**

In this article, the authors conceptualize positive youth development within a developmental systems model. They begin by explaining developmental systems, relative plasticity, and regulation of person-context relations as a context for understanding human behavior and

developmental change. The authors then discuss the role of thriving processes and civic engagement in positive youth development. They conclude that thriving is likely to emerge when youth develop in a context of policies and community action programs that help them build and pursue healthy lives that make a productive contribution to self, family, and community. Such contexts include a healthy start, safe environment, education for marketable skills, opportunity to give back or to serve the community, and freedom from prejudice and discrimination.

**Lewinsohn, P.M., P. Rohde, D.N. Klein, and J.R. Seeley. 1999. "Natural Course of Adolescent Major Depressive Disorder: I. Continuity Into Young Adulthood." *Journal of the American Academy of Child & Adolescent Psychiatry* 38(1):56-63.**

This article examines the course of adolescent major depressive disorder (MDD) by comparing rates of mood and nonmood disorders between age 19 and 24 years in participants with a history of adolescent MDD versus participants with adolescent adjustment disorder with depressed mood, nonaffective disorder, and no disorder. Participants from a large community sample who had been interviewed twice during adolescence completed a third interview assessing Axis I psychopathology and antisocial and borderline personality disorders after their 24th birthday: 261 participants with MDD, 73 with adjustment disorder, 133 with nonaffective disorder, and 272 with no disorder through age 18. MDD in young adulthood was significantly more common in the adolescent MDD group than the nonaffective and no disorder groups (average annual rate of MDD = 9.0 percent, 5.6 percent, and 3.7 percent, respectively). Adolescents with MDD also had a high rate of nonaffective disorders in young adulthood (annual nonaffective disorder rate = 6.6 percent) but did not differ from adolescents with nonaffective disorder (7.2 percent). Prevalence rates of dysthymia and bipolar disorder were low (<1 percent). Adolescents with adjustment disorder exhibited similar rates of MDD and nonaffective disorders in young adulthood as adolescents with MDD. This study documents the significant continuity of MDD from adolescence to young adulthood.

**Lewinsohn, P.M., P. Rohde, J.R. Seeley, D.N. Klein, and I.H. Gotlib. 2000. "Natural Course of Adolescent Major Depressive Disorder in a Community Sample: Predictors of Recurrence in Young Adults." *American Journal of Psychiatry* 157(10):1584-1591.**

The primary purpose was to identify factors related to the recurrence of major depressive disorder during young adulthood (19-23 years of age) in a community sample of formerly depressed adolescents. A total of 274 participants with adolescent-onset major depressive disorder were assessed twice during adolescence and again after their 24th birthday. Lifetime psychiatric information was obtained from their first-degree relatives. Adolescent predictor variables included demographic characteristics, psychosocial variables, characteristics of adolescent major depressive disorder, comorbidity, family history of major depressive disorder and nonmood disorder, and antisocial and borderline personality disorder symptoms. Low levels of excessive emotional reliance, a single episode of major depressive disorder in adolescence, low proportion of family members with recurrent major depressive disorder, low levels of antisocial and borderline personality disorder symptoms, and a positive attributional style (males only) independently predicted which formerly depressed adolescents would remain free of future psychopathology. Female gender, multiple major depressive disorder episodes in

adolescence, higher proportion of family members with recurrent major depressive disorder, elevated borderline personality disorder symptoms, and conflict with parents (females only) independently predicted recurrent major depressive disorder. Comorbid anxiety and substance use disorders in adolescence and elevated antisocial personality disorder symptoms independently distinguished adolescents who developed recurrent major depressive disorder comorbid with nonmood disorder from those who developed pure major depressive disorder. Formerly depressed adolescents with the risk factors identified in this study are at elevated risk for recurrence of major depressive disorder during young adulthood and therefore warrant continued monitoring and preventive or prophylactic treatment.

**Maag, J.W., and A. Katsiyannis. 1998. "Challenges Facing Successful Transition for Youths with E/BD." *Behavioral Disorders* 23(4):209-221.**

In 1990, the Individuals with Disabilities Education Act (IDEA) added a new mandate that the individualized education program for all students age 16 and older must include a statement of the transition services needed to prepare them for post-school activities. Providing transition services to youth with emotional or behavioral disorders (E/BD) has been particularly difficult because their problems are often intractable and, consequently, result in poor outcomes such as dropping out of school, unemployment, incarceration, and psychopathology. The authors described challenges involved in ensuring successful transition for youth with E/BD and make recommendations for improving transition services.

**MacDonald, S., S. Wells, and T.C. Wild. 1999. "Occupational Risk Factors Associated with Alcohol and Drug Problems." *American Journal of Drug and Alcohol Abuse* 25(2):351-369.**

Ames and Janes (see abstract above) provide a theoretical framework that explains alcohol and/or drug problems among workers. Existing studies of occupational risk factors for alcohol and drug problems across multiple occupations and industries provide mixed findings with respect to Ames and Janes' framework. In a preliminary study, the relationships between occupational characteristics and measures of alcohol and drug problems were investigated among a sample of workers from a variety of occupations and industry settings. Some support was found for all of the major elements of Ames and Janes' framework: normative regulation of drinking, quality and organization of work, workplace factors and drinking subcultures.

**MacKinnon, D.P., M.P. Taborga, and A.A. Morgan-Lopez. 2002. "Mediation Design for Tobacco Prevention Research." *Drug and Alcohol Dependence* 68:S69-S83.**

This paper describes research designs and statistical analysis to investigate how tobacco prevention programs achieve their effects on tobacco use. A theoretical approach to program development and evaluation useful for any prevention program guides the analysis. The theoretical approach focuses on action theory for how the program affects mediating variables and on conceptual theory for how variables are related to tobacco use. Social influences, such as beliefs about peers, are a primary mediating factor in substance use, including tobacco. Information on the mediating mechanisms by which tobacco prevention programs achieve effects is useful for the development of efficient programs and provides a test of the theoretical basis of prevention efforts. Examples of these potential mediating mechanisms are described, including mediated effects through attitudes, asocial norms, beliefs about positive

consequences, and accessibility to tobacco. Prior research provides evidence that changes in social norms are a critical mediating mechanisms for successful tobacco prevention. Analysis of mediating variables in single group designs with multiple mediators are described as well as multiple group randomized designs which are the most likely to accurately uncover important mediating mechanisms. More complicated dismantling and constructive designs are described and illustrated based on current findings from tobacco research. Mediations analysis for categorical outcomes and more complicated statistical methods are outlined.

**MacMillan, H.L., J.E. Fleming, D.L. Streiner, E. Lin, M.H. Boyle, E. Jamieson, E.K. Duku, C.A. Walsh, M.Y. Won, and W.R. Beardslee. 2001. "Childhood Abuse and Lifetime Psychopathology in a Community Sample." *American Journal of Psychiatry* 158(11):1878-1883.**

The authors assessed lifetime psychopathology in a general population sample and compared the rates of five psychiatric disorder categories between those who reported a childhood history of either physical or sexual abuse and those who did not. A modified version of the Composite International Diagnostic Interview and a self-completed questionnaire on child abuse were administered to a probability sample (N=7,016) of Ontario residents 15 to 64 years of age. Those reporting a history of childhood physical abuse had significantly higher lifetime rates of anxiety disorders, alcohol abuse/dependence, and antisocial behavior and were more likely to have one or more disorders than were those without such a history. Women, but not men, with a history of physical abuse had significantly higher lifetime rates of major depression and illicit drug abuse/dependence than did women with no such history. A history of childhood sexual abuse was also associated with higher rates of all disorders considered in women. In men, the prevalence of disorders tended to be higher among those who reported exposure to sexual abuse, but only the associations with alcohol abuse/dependence and the category of one or more disorders reached statistical significance. The relationship between a childhood history of physical abuse and lifetime psychopathology varied significantly by gender for all categories except for anxiety disorders. Although not statistically significant, a similar relationship was seen between childhood history of sexual abuse and lifetime psychopathology. A history of abuse in childhood increases the likelihood of lifetime psychopathology; this association appears stronger for women than men.

**Mangione, T.W., J. Howland, B. Amick, J. Cote, M. Lee, N. Bell, and S. Levine. 1999. "Employee Drinking Practices and Work Performance." *Journal of Studies on Alcohol* 60(2):261-270.**

The purpose of this study was to examine the independent effects of a variety of drinking indicators on self-reported work performance. To do so, the authors analyzed data from a cross-sectional mailed survey (response rate = 71 percent) of managers, supervisors, and workers (N = 6,540) at 16 worksites. Average daily volume was computed from frequency and usual quantity reports. Drinking on the job included drinking during any of six workday situations. The CAGE was used to indicate alcohol dependence. Employees were also asked how frequently they drank to get high or drunk. Work performance was measured through a series of questions about work problems during the prior year. The number of times respondents experienced work performance problems was regressed in the four drinking measures, and a variety of demographic characteristics, job characteristics, and life

circumstances that might also negatively affect work performance. The authors found that the frequency of self-reported work performance problems increased, generally, with all four drinking measures. In a multivariate model that controlled for a number of demographics, job characteristics, and life situations, average daily volume was no longer significantly associated with work performance but the other three drinking measures were. Interestingly, although moderate-heavy and heavy drinkers reported more work performance problems than very light, light, or moderate drinkers, the lower-level-drinking employees, since they were more plentiful, accounted for a larger proportion of work performance problems than did the heavier drinking groups. The authors concluded that employers should develop clear policies limiting drinking on the job, and, in addition to Employee Assistance Programs for problem drinkers, should develop worksite educational interventions aimed at informing all employees about the relationship between drinking behaviors and work performance.

**Martin, A., and D.J. Cohen. 2000. "Adolescent Depression: Window of (Missed?) Opportunity." *American Journal of Psychiatry* 157(10):1549-1551.**

Major depression, one of the most common psychiatric disorders of adolescence, can result in substance abuse, academic and social derailment, unplanned pregnancy, and suicide. Follow-up studies of depressed adolescents show high rates of recurrence and continuity into adult affective disorder. In a study cited by the authors (Lewinsohn et al. 2000), only one-quarter of depressed teenagers are free of illness on their 24<sup>th</sup> birthday. This study also recorded a high rate of substance abuse disorders. Twenty percent of depressed teens had a comorbid substance abuse disorder and substance abuse disorders represented almost 80 percent of nonmood outcomes by age 24. This study, along with others, suggests a progression from depression into substance abuse. Early detection and treatment of adolescents with depression provides a therapeutic opportunity to reduce the future burden of substance abuse. Vulnerability factors for depression identified by Lewinsohn et al. (female gender, family members with concurrent depression, multiple depressive episodes, conflict with parents, borderline personality) cover a variety of factors. The authors argue for an equally broad and multivalent treatment approach that includes pharmacotherapy, family therapy, and psychotherapy.

**Martin, J.K., P.M. Roman, and T.C. Blum. 1996. "Job Stress, Drinking Networks, and Social Support at Work: A Comprehensive Model of Employees' Problem Drinking Behaviors." *Sociological Quarterly* 37:579-599.**

Most research examining the problem drinking behaviors of employees has sought to demonstrate that variation in alcohol consumption derives from nonrewarding or stressful aspects of modern work that promote intrapsychic stress and/or alienation. These inquiries have ignored additional job factors that might influence employee drinking patterns. We extend this literature by developing and testing a comprehensive model of influences on employee problem drinking. The model includes the simultaneous influences of stressful working conditions, participation in job-based drinking networks, and perceived social support on the job. Analyses of data from the 1991 National Employee Survey (NES) indicate that this explanatory model significantly improves our understanding of the job-related influences on employee problem drinking. We also demonstrate that each class of job factors has important mediated

influences on problem drinking that result from their association with individualized job escapist-oriented reasons for drinking.

**McCarthy, W.J., and M.D. Anglin. 1990. "Narcotics Addicts: Effect of Family and Parental Risk Factors on Timing of Emancipation, Drug Use Onset, Pre-Addiction Incarceration and Educational Achievement." *Journal of Drug Issues* 20(1):99-123.**

The authors of this article examined the family background characteristics of 756 male heroin users to determine the effects of selected family risk factors on the timing of onset of emancipation and drug use, on pre-addiction incarcerations and on educational attainment. These risk factors included family size, birth order, socioeconomic status, family drug use, parental history of alcoholism, parental absence, and family history of incarceration. The two measures of age of emancipation were age on leaving school and age on leaving home. Age of onset of regular use was measured for the following drugs: tobacco, alcohol, marijuana and heroin. Incarceration measures included the occurrence of juvenile detention and the time spent in prison prior to first addition. Educational attainment was a score on a California State achievement test. Larger family size, higher birth order, parental alcoholism, and parental absence were found to have a cumulatively negative effect on how young the respondents were when they first left home and when they first used particular drugs regularly, on their level of tested academic achievement, and on their probability of juvenile detention. The authors discuss the implications for social policies designed to prevent drug abuse.

**McGue, M. 1994. "Genes, Environment, and the Etiology of Alcoholism." In *The Development of Alcohol Problems: Exploring the Biopsychosocial Matrix of Risk, NIAAA Monograph No. 26*, R. Zucker, G. Boyd, and J. Howard, eds., pp. 1-39. Rockville, MD: U.S. Department of Health and Human Services.**

The author describes three basic methodological approaches used to study genetic contributions to alcoholism: adoption studies, twin studies, and genetic marker studies; the author also reviews major studies that make use of each approach. There is convincing evidence for a genetic influence on the development of alcoholism, at least in males, though the role of environmental factors cannot be ignored. The challenge before researchers is to integrate these biological-genetic approaches to alcoholism with psychosocial approaches; these two lines of research have proceeded independent of each other, for the most part. Psychosocial research will benefit from the early identification of individuals who have a biological risk for alcoholism and are, thus, more susceptible to environmental factors.

**McMorris, B.J., and C. Uggen. 2000. "Alcohol and Employment in the Transition to Adulthood." *Journal of Health and Social Behavior* 41(3):276-294.**

The authors examined the relationship between work hours and alcohol use during the transition from adolescence to adulthood. Both hours of employment and drinking may be products of weak bonds to school and family. Alternatively, work may exert an independent effect on alcohol use by exposing adolescents to opportunities and associates that facilitate drinking. Using longitudinal data from the Youth Development Study (YDS), the authors presented static score regression models showing that long work hours increase levels of drinking during high school. These effects were mediated in large part by work-derived

independence from parents, suggesting that a precocious transition to adult roles may be the mechanism connecting work hours and alcohol use. Work effects on drinking are short-lived, however, as adolescent hours employment did not significantly influence alcohol use after high school.

**Mensch, B.S., and D.B. Kandel. 1988. "Do Job Conditions Influence the Use of Drugs?" *Journal of Health and Social Behavior* 29(2):169-184.**

The relationships between job conditions and use of four classes of drugs—alcohol, cigarettes, marijuana, and cocaine—are investigated in the Youth Cohort of the National Longitudinal Survey (NLSY) of Labor Market Experience, a nationally representative survey of the labor-force experience of young adults aged 19 through 27 in 1984. Indirect measures of job characteristics, based on census-based classifications developed by Karasek et al. (1982) and on the DOT (Miller, Truman, Cain, and Ross 1980), were supplemented by limited self-reported measures. No clear epidemiological patterns emerge regarding the distribution of drug use in general or on the job across occupations and industries. Similarly, specific job dimensions, whether assessed from job titles or from the respondents themselves, showed very low correlations with recency/frequency measures of drug use. Individual factors indexing lack of commitment to social institutions, such as having dropped out of school, participation in delinquent activities, and not being married, are much stronger predictors of drug use than are specific job conditions. Our conclusion is that substance use by workers is not due as much to conditions of the workplace as to attributes of the workforce.

**Mensch, B.S., and D.B. Kandel. 1988. "Dropping Out of High School and Drug Involvement." *Sociology of Education* 61(2):95-113.**

The authors explored the relationship between dropping out of high school and substance use using the National Longitudinal Survey of Young Adults, a national longitudinal sample of young Americans aged 19-27 in 1984. Cross-sectional data indicated that high school dropouts were more involved with cigarettes and illicit drugs than were graduates and that those who obtained a graduate equivalency diploma (GED) were the most intensely involved. Event-history analysis indicates that, controlling for other important risk factors, prior use of cigarettes, marijuana, and other illicit drugs increases the propensity to drop out and that the earlier the initiation into drugs, the greater the probability of premature school leaving. Thus, preventing or at least delaying the initiation of drug use will reduce the incidence of dropping out from our nation's high schools.

**Merikangas, K.R. 1994. "Vulnerability for Alcoholism." In *The Development of Alcohol Problems: Exploring the Biopsychosocial Matrix of Risk, NIAAA Monograph No. 26*, R. Zucker, G. Boyd, and J. Howard, eds., pp. 331-339. Rockville, MD: U.S. Department of Health and Human Services.**

This commentary reviews the six major risk factors for development of alcoholism: family history, psychopathology, temperament, central nervous system function, alcohol metabolism, and environmental factors. The author discusses a theory on the development of alcoholism advanced by Tarter and Vanyukov. This theory integrates behavior genetics and developmental psychology and posits that temperament and environment interact in the development of alcoholism. Temperamental factors include activity level, emotionality, sociability, and attention

span. Environmental factors that make temperamental expression possible are familial environment, sociodemographic factors, school experience, occupational environment, and cultural influences. Tarter and Vanyukov's theory is appealing because it acknowledges the multiple and complex pathways of the development of alcoholism. The author proposes types of research that would help to establish the validity of this theory.

**Merikangas, K.R., B.J. Rounsaville, and B.A. Prusoff. 1992. "Familial Factors in Vulnerability to Substance Abuse." In *Vulnerability to Drug Abuse*, M.D. Glantz and R.W. Pickens, eds., pp. 75-97. Washington, DC: American Psychological Association.**

This chapter reviews methodology and findings of familial studies of substance abuse. Familial transmission of alcoholism has been confirmed, with 30 percent of variance attributable to genetic factors. Unlike other genetically linked psychiatric disorders (e.g., schizophrenia), alcoholism requires voluntary consumption of alcohol; complex social, environmental, and behavioral factors play a role. There is much less evidence addressing familial transmission of substance abuse other than alcohol, especially where illicit substances are concerned. Studies have generally established that biologic-genetic factors influence the initiation and persistence of substance use; peer relationships are strongly related to substance use. The authors conclude that the following factors may accelerate an individual's transition from substance use to abuse: individual's antisocial personality disorder, history of drug abuse in a parent or sibling, and concordance for substance abuse in parents.

**Merikangas, K.R., M. Stolar, D.E. Stevens, J. Goulet, M.A. Preisig, B. Fenton, H. Zhang, S.S. O'Malley, and B.J. Rounsaville. 1998. "Familial Transmission of Substance Use Disorders." *Archives of General Psychiatry* 55(11):973-979.**

There is increasing evidence that substance use disorders are familial and that genetic factors explain a substantial degree of their familial aggregation. This article reports a controlled family study of probands with several different predominant drugs of abuse, including opioids, cocaine, cannabis, and/or alcohol. The subjects for the present study included 231 probands with dependence on opioids, cocaine, cannabis, and/or alcohol and 61 control probands, and their 1267 adult first-degree relatives. Diagnostic estimates were based on semistructured diagnostic interviews and/or structured family history interviews regarding each proband, spouse, and adult first-degree relative. The interview data were reviewed blindly and independently by clinicians with extensive experience in the evaluation and treatment of substance use disorders. There was an 8-fold increased risk of drug disorders among the relatives of probands with drug disorders across a wide range of specific substances, including opioids, cocaine, cannabis, and alcohol, which is largely independent from the familial aggregation of both alcoholism and antisocial personality disorder. There was also evidence of specificity of familial aggregation of the predominant drug of abuse. Elevation in risk of this magnitude places a family history of drug disorder as one of the most potent risk factors for the development of drug disorders. These results suggest that there may be risk factors that are specific to particular classes of drugs as well as risk factors that underlie substance disorders in general.

**Milgram, G.G. 1998. "An Analysis of Student Assistance Programs: Connecticut, New Jersey, and New York." *Journal of Drug Education* 28(2):107-116.**

A questionnaire, designed to determine the process for identifying and providing assistance to students who demonstrate a variety of problem behaviors that interfere with learning or co-curricular performance in school, was mailed to school superintendents (N = 1,526) in Connecticut, New Jersey, and New York. Four-hundred and fifty-one responses were received; the majority indicated that a formal written policy exists for helping students and most also have a formal written procedure. The assistance program, most frequently called student assistance, is predominantly found at the high school level. A full-time student assistance counselor paid by the school district or a grant funded position conducts the program. Students in the three states use the services of the program for alcohol problems, drug problems, family problems, school behavior problems, academic problems, etc. The major referral sources to the assistance programs are teachers, guidance counselors, and the students themselves. Survey findings indicated that assistance programs for students in Connecticut, New Jersey, and New York play a significant role in helping students who are experiencing problems and also positively impact on the school and the community.

**Mitchell, D.P., A. Betts, and M. Epling. 2002. "Youth Employment, Mental Health and Substance Misuse: A Challenge to Mental Health Services." *Journal of Psychiatric and Mental Health Nursing* 9:191-198.**

Employment is the cornerstone of social inclusion, the means by which individuals play a full and active part in society and has a pivotal role in helping young people to negotiate the transitional period between the child and adulthood. Employment therefore should be seen as a right and given a higher priority by health and social care agencies. There are numerous difficulties preventing some young people from achieving full employment and these are compounded for young people with concurrent mental health and substance misuse problems (dual diagnosis). The coexistence of these two problems is on the increase and they are recognized as significant barriers to employment. Unemployment may lead to social alienation, criminal or other antisocial activity and a higher incidence of suicide. Consequently, there is a danger of young unemployed people slipping into a spiral of self-defeating, antisocial, and risky behavior. There is little evidence of health and social care agencies working in partnership with voluntary sector organizations to tackle the growing problem of dual diagnosis and youth unemployment, although there are obvious linkages between employment, psychological health, social inclusion, and substance misuse. It is therefore worth exploring the issues surrounding work, mental health, and substance misuse in young people if we are to generate new ways of thinking about and responding to the needs of this target group. This presents a challenge to mental health services, particularly nurses who face the impact of these issues in their day-to-day practice but often lack the preparation and support to adequately address them.

**Monti, P.M., S.M. Colby, and T.A. O'Leary. 2001. "Introduction." In *Adolescents, Alcohol, and Substance Abuse; Reaching Teens through Brief Interventions*, P.M. Monti, S.M. Colby, and T.A. O'Leary, eds., pp. 1-18. New York: Guilford Press.**

This book introduction reviews adolescent substance use data, considers racial and cultural dimensions of use, and discusses stages of change, harm reduction, pharmacotherapy, and the

elements of brief motivational treatment which the book as a whole advocates. Citing figures from Monitoring the Future, the National Comorbidity Study, and numerous articles, the authors observe that two decades into the war on drugs, adolescent substance use remains a problem. Early and dangerous alcohol use has a baneful effect on adolescent development and transition to adulthood. Adolescent substance misuse is associated with earlier sexual activity, increased risk of dropping out of school, premature separation from parents; these difficulties are associated with later problems, such as marital difficulties and lower occupational status. The authors discuss Prochaska and DiClemente's stages of change, detailing how substance users who change their behaviors progress through precontemplation, preparation, action, and maintenance stages, though often with relapses to previous stages. Harm reduction is examined for its utility in treating adolescent alcohol use in particular. Harm reduction is a treatment philosophy that accepts alternatives to total abstinence when abstinence is not a realistic or useful goal. Because adolescent alcohol abuse is often intermittent and not necessarily progressive or fatal, a "come as you are" approach to treatment may better serve adolescents who need help, but reject the idea of abstinence. The authors note the lack of useful data on substance use and race and culture; few researchers have taken the effort to recruit appropriate subjects or design culturally sensitive treatment programs. The authors advise that clinicians err on the side of caution when considering pharmacotherapy in adolescents; they do not recommend pharmacotherapy be used in brief interventions. Finally, the six elements of brief interventions are outlined. They are represented by the acronym, *FRAMES*: Feedback is relayed quickly to the client; Responsibility for change is emphasized; Advice to change is given; a Menu of change options is provided; Empathy is expressed by clinician; Self-efficacy is emphasized. Brief interventions consist of one to five sessions and are not merely compressed versions of traditional treatment.

**Moore, D.D., and J.R. Forster. 1993. "Student Assistance Programs: New Approaches for Reducing Adolescent Substance Abuse." *Journal of Counseling and Development* 71(3):326-329.**

In this article, the authors describe school-based Student Assistance Programs (SAPs), which are designed to reduce adolescents' substance abuse. SAPs, modeled after Employee Assistance Programs (EAPs) in the workplace, are identifying, assessing, referring, and managing the cases of substance-abusing students. Adoption of the SAP model is accelerating in response to the growing need to address substance-impaired youth with resources from both the school and the community.

**Moore, R.S., J.M. Light, G.M. Ames, and R.F. Saltz. 2001. "General and Job-Related Alcohol Use and Correlates in a Municipal Workforce." *American Journal of Drug and Alcohol Abuse* 27(3):543-560.**

The authors examined the prevalence and correlates of both general and workplace-related drinking measures using data from a telephone survey of 673 workers in a large municipal bureaucracy and tested the hypothesis that observed differences across job categories can be explained by compositional difference in terms of demographic variables known to be related to drinking behavior. Results suggest such factors account for much of the variation in general drinking measures (prior 28-day quantity, CAGE score, indicating risk for dependence), but that significant variation in a workplace-related drinking measure (times ever drank before, during, or

just after work) remains even after such factors are controlled. Implications of these findings for existing theories of workplace effects on drinking are discussed, along with a consideration of appropriate levels of analysis for future studies.

**Morehouse, E., and N.S. Tobler. 2000. "Preventing and Reducing Substance Use among Institutionalized Adolescents." *Adolescence* 35(137):1-28.**

The Residential Student Assistance Program, serving high-risk, multiproblem, inner-city, primarily African-American and Latino youth, was evaluated for its ability to prevent and decrease alcohol and other drug use. Participants were drawn from several adolescent residential facilities: three foster care sites for abused, neglected, orphaned, or troubled adolescents, a nonsecure facility for adjudicated juvenile offenders, a treatment center for teens with severe psychiatric problems, and a locked county correctional facility. In addition, comparison groups were employed. A 5th-year outcome evaluation documented the program's effectiveness in both preventing and reducing substance use among participants, with impact related to program dosage. Qualitative process data clarified and strengthened confidence in the quantitative outcomes.

**Murray, D.M., M. Davis-Hearn, A.I. Goldman, P. Pirie, and R.V. Luepker. 1988. "Four- and Five-Year Follow-Up Results from Four Seventh-Grade Smoking Prevention Strategies." *Journal of Behavioral Medicine* 11(4):395-405.**

Recent studies have suggested that a prevention program that addresses the social influences that encourage smoking can be effective in deterring cigarette use by adolescents. This study presents 4- and 5-year follow-up results from two studies that evaluated three variations of this social influences model and compared them to a health consequences program and an existing-curriculum condition. The results suggest that a seventh-grade program, built around the social influences model and taught jointly by same-age peer leaders and local classroom teachers, may reduce 4-year weekly- and daily-smoking cumulative incidence rates, providing the first evidence for any long-term effects for the social influences model. However, the results also suggest that any long-term effects from such interventions are probably limited and may depend heavily on the manner in which the social influences model is translated during the intervention. Additional follow-up studies are needed to clarify the long-term effects of these intervention programs.

**Newcomb, M.D. 1988. *Drug Use in the Workplace: Risk Factors for Disruptive Substance Use Among Young Adults*. Dover, MA: Auburn House Publishing.**

The author defines disruptive substance use as use of a substance (including licit ones such as alcohol and cigarettes) at school or work; the location, not the substance used, makes the use disruptive. The audience for the book is drug counselors and people who have supervisory authority at school and work (i.e., principals and managers). The author's findings are based on data obtained from 650 subjects in Los Angeles surveyed over 8 years from adolescence to young adulthood (approximately ages 15 to 22). The author uses these data to examine multiple risk factors and correlates of disruptive substance use in this population. Although general substance use trends in this population have been studied extensively, especially in high school students, almost no data exist about substance use that takes place in school or at the workplace, despite frequent alarms about the prevalence of such use. Nearly one-third of

those sampled admitted to being drunk or high at school or work at least once; men engage in disruptive use at almost twice the rate of women. Those who use drugs at work usually use more than one substance (e.g., marijuana and beer); problems of worksite abuse are usually problems of polydrug abuse. Based on demographic data, those most likely to engage in disruptive use were male, Black or White (i.e., not Hispanic or Asian), unmarried, had no children, and had few educational plans. Especially for those subjects in school, having academic plans is inversely related to disruptive substance use. As would be expected from the frequent finding that the best predictor of future substance use is past substance use, substance use outside of school or work is highly associated with disruptive substance use; the substance used outside of school or work is the substance most likely to be disruptively used.

Many reports have linked workplace substance use to factors at the workplace. In the young adult workers surveyed for this book, disruptive substance use was not explained by workplace factors. Neither was disruptive use linked significantly with family problems or unhappiness. The best psychosocial predictor of disruptive use was nonconformity. Following up on the finding that nonconformity was linked to disruptive use, the author discovered that a very strong association exists between lack of respect for laws (often manifested as dealing drugs) and disruptive substance abuse. Most types of substance use behavior become stabilized during the period that this study examines: adolescence to young adulthood. Programs implemented in high schools or at worksites that employ people in their late teens and early twenties, therefore, stand to have the greatest chance of curtailing future substance use. Examining connections between why adolescents take drugs and the prevalence of worksite abuse, the author found that the strongest correlated reason was the desire to escape negative feelings. This suggests that if employers educate employees about other ways to deal with stress and difficulty, they can reduce workplace substance abuse. Disruptive substance use is largely a function of the individual, not of the school or worksite—a manifestation of the same problem behavior and poor decision-making that leads to substance use in general. The author closes by advocating a data-driven approach to the problem of disruptive substance use. Rather than decry an epidemic with little evidence as some have done, the author points out that while a third of the people sampled had used drugs at work, most of them only did so once. Likewise, of the people who had used illicit drugs in the past 6 months, only half ever did so at work. While disruptive substance use certainly signals a disrespect for the employer and the job, the author suggests that the best response may be to offer employees help and alternatives (in the form of EAPs or similar programs) and to try to improve employees' working conditions.

**Newcomb, M.D. 1995. "Identifying High-Risk Youth: Prevalence and Patterns of Adolescent Drug Abuse." In *Adolescent Drug Abuse: Clinical Assessment and Therapeutic Interventions*, NIDA Research Monograph 156, E. Rahdert and D. Czechowitz, eds., pp. 7-38. Rockville, MD: U.S. Department of Health and Human Services.**

Understanding the risks that underlie adolescent substance abuse is crucial. But the most frequently cited surveys of adolescent substance use—Monitoring the Future and the National Survey on Drug Use and Health—are school based and so do not fully account for young people at greatest risk: truant, dropout, and homeless teens. While adolescent use of illicit substances has been dropping for the last two decades, students are initiating use earlier. Consumption of licit substances poses serious health risks. Drunk driving is a leading cause of

death in teens and smoking will probably be responsible for more deaths of current teens than other single cause. The prevalence of teen alcohol and tobacco use should make these substances top priorities for prevention and treatment. The authors propose four main categories of risk factors for adolescent substance use: culture and society, interpersonal, psychobehavioral, biogenetic. The social dimension of substance use is key. Most substance use is initiated among peers and friends, so peer influences such as modeling use, provision of drugs, and encouraging use are strong predictors of initiation. Multiple risk factors contribute to a teen's decision to use substances. The authors argue that multiple protective factors can militate against that decision. Religiosity, self-acceptance, positive home life, sanctions against substance use, respect for laws, and educational aspirations can counter-balance an adolescent's risk factors. Substance use can hinder an adolescent's transition into adulthood, introducing a hiatus in development. Examination of risk factors for substance use should be accompanied by consideration of other problems of adolescence.

**Normand, J., S.D. Salyards, and J.J. Mahoney. 1990. "An Evaluation of Preemployment Drug Testing." *Journal of Applied Psychology* 75(6):629-639.**

As part of blind longitudinal study, 5,465 job applicants were tested for use of illicit drugs; the relationships between these drug-test results and absenteeism, turnover, injuries, and accidents on the job were also evaluated. After an average 1.3 years of employment, employees who had tested positive for illicit drugs had an absenteeism rate 59.3 percent higher than employees who had tested negative (6.63 percent vs. 4.16 percent of scheduled work hours, respectively). Employees who had tested positive also had a 47 percent higher rate of involuntary turnover than employees who had tested negative (15.41 percent vs. 10.51 percent, respectively). No significant associations were detected between drug-test results and measures of injury and accident occurrence. The practical implications of these results, in terms of economic utility and prediction errors, are discussed.

**Nyhan, P. 2003. "Recovering Addicts Find Little Help in the Workplace." *Seattle Post-Intelligencer* December 15:n.p.**

Over half of human resources managers surveyed by the Hazelden Foundation said they lacked the expertise to detect substance abuse in the workplace. There is often a disconnect between availability of services and employees' use of them. More than 90 percent of human resources managers said that employees could easily get substance abuse treatment, but 38 percent said that no employees used the services. Providing treatment services may not be sufficient in itself to help employees who struggle with substance abuse.

**Partee, G.L. 2003. *Preparing Youth for Employment: Principles and Characteristics of Five Leading United States Youth Development Programs*. Washington, DC: American Youth Policy Forum.**

This report, designed for policy makers and practitioners who implement programs, provides an overview of five leading U.S. youth employment programs: Job Corps, National Guard Youth ChalleNGe Program, STRIVE, YouthBuild, and Youth Service and Conservation Corps. These programs have proved to be effective in contributing to increased levels of employment, higher earnings, high school completion, college attendance, reduced reliance on public assistance, and reduced criminal activity. This report details the principles and characteristics of these five

leading youth employment programs and identifies components that can be transferred or applied to aid other programs.

**Paschall, M.J., C.L. Ringwalt, and R.L. Flewelling. 2002. "Explaining Higher Levels of Alcohol Use among Working Adolescents: An Analysis of Potential Explanatory Variables." *Journal of Studies in Alcohol* 63(2):169-178.**

The purpose of this study was to explain higher rates of alcohol use observed among working adolescents relative to non-working adolescents. To do so, the authors collected in-home survey data from a representative sample of 4,497 14- to 17-year-olds who participated in the 1998 National Household Survey on Drug Abuse (NHSDA). Multivariate logistic regression analyses were conducted to determine whether relationships between work status and past-month alcohol use and heavy drinking would persist after adjusting for demographic characteristics and select risk and protective factors in the community, family, school, and peer-individual domains. As anticipated, significantly higher rates of past-month alcohol use and heavy drinking were reported by working than non-working adolescents. Multivariate analyses indicated that the higher rates of past-month alcohol use and heavy drinking among working adolescents were largely explained by demographic characteristics (e.g., age, race/ethnicity), together with perceived drinking norms among adults, other students, and friends. The authors' findings suggest that the relationship between employment and alcohol use among adolescents is largely spurious, due to demographic differences between working and non-working adolescents. However, their findings also suggest that working adolescents are more likely to be exposed to adults and peers who drink, which may be attributed in part to their work setting.

**Perkins, H.W. 1999. "Stress-Motivated Drinking in Collegiate and Post-Collegiate Young Adulthood: Life Course and Gender Patterns." *Journal of Studies on Alcohol* 60(2):219-217.**

This study examines stress-motivated drinking and its potential contribution to alcohol problems for young adults in college and subsequent post-collegiate contexts, specifically focusing on the simultaneous influences of life course stage and gender. Data are drawn from a research project on health and well-being among multiple cohorts of college students and graduates from an undergraduate institution of higher education. Representative samples of students were surveyed in 1982 (n = 1,514), 1987 (n = 659), and 1991 (n = 926). Surveys were administered to graduates in 1987 (graduating classes of '79, '82, and '85; n = 860) and again in 1991 (graduating classes of '79, '82, '85, and '89; n = 1,151). Using this cross-sectional and longitudinal database, developmental aging effects are tested while checking for historical cohort and period effects. Stress-motivated drinking is somewhat more prevalent in the undergraduate years as are other drinking motivations, but stress-related reasons for drinking are relatively more prominent among motivations and relatively more problematic in terms of consumption levels and consequences in succeeding years after college. The prominence of stress-related drinking and its increased negative effects begin sooner for women than for men. Moving from college to stages of post-collegiate young adulthood is associated with substantial decreases in alcohol consumption and related problems. Drinking for stress-reduction, however, becomes increasingly prominent as the primary motivation for the drinking that does occur in post-collegiate life, and this drinking motivation also becomes increasingly problematic in terms of negative consequences of alcohol use as each cohort ages. The problematic

prominence of stress-motivated drinking is notable at earlier developmental points in this trajectory for women.

**Peterson, A.V. Jr., K.A. Kealey, S.L. Mann, P.M. Marek, and I.G. Sarason. 2000. "Hutchinson Smoking Prevention Project: Long-Term Randomized Trial in School-Based Tobacco Use Prevention—Results on Smoking." *Journal of the National Cancer Institute* 92(24):1979-1991.**

No long-term impact has yet been observed with the use of the social-influences approach to school-based smoking prevention for youth. However, whether this lack of impact is due to methodologic problems with the studies or to the failure of the interventions is unclear. The Hutchinson Smoking Prevention Project (HSPP), conducted from September 1984 through August 1999, aimed to determine the long-term impact of a theory-based, social-influences, grade 3-12 intervention on smoking prevalence among youth. Forty Washington school districts were randomly assigned to the intervention or to the control condition. Study participants were children enrolled in two consecutive 3<sup>rd</sup> grades in the 40 districts (n=8,388); they were followed to 2 years after high school. The trial achieved high implementation fidelity and 94 percent follow-up. Data were analyzed with the use of group-permutation methods, and all statistical tests were two sided. No significant difference in prevalence of daily smoking was found between students in the control and experimental districts, either at grade 12 or at 2 years after high school. Moreover, no intervention impact was observed for other smoking outcomes, such as extent of current smoking or cumulative amount smoked, or in subgroups that differ in *a priori* specified variables, such as family risk for smoking. The rigor of the HSPP trial suggests high credence for the intervention impact results. Consistent with previous trials, there is no evidence from this trial that a school-based social-influences approach is effective in the long-term deterrence of smoking among youth.

**Pine, D.S., E. Cohen, P. Cohen, and J. Brook. 1999. "Adolescent Depressive Symptoms as Predictors of Adult Depression: Moodiness or Mood Disorder?" *American Journal of Psychiatry* 156(1):133-135.**

The authors examine the relationship between subclinical depressive symptoms in adolescence and major depressive episodes in adulthood. An epidemiologic sample of 776 young people received psychiatric assessments in 1983, 1985, and 1992. Among adolescents not meeting criteria for major depression, the authors estimated the magnitude of the association between subclinical adolescent depressive symptoms and adult major depression. Symptoms of major depression in adolescence strongly predicted an adult episode of major depression: having depressive symptoms more than two standard deviations above the mean in number predicted a two-fold to three-fold greater risk for an adult major depressive episode. Symptoms of depression in adolescence strongly predict an episode of major depression in adulthood, even among adolescents without major depression.

**Pollack, E.S., G.M. Franklin, D. Fulton-Kehoe, and R. Chowdhury. 1998. "Risk of Job-Related Injury among Construction Laborers with a Diagnosis of Substance Abuse." *Journal of Occupational and Environmental Medicine* 40(6):573-577.**

This study attempts to determine whether a diagnosis of substance abuse among construction laborers is associated with an increased risk of work-related injuries. Records for construction

laborers in Washington State who were covered by health insurance through the local union were matched against worker's compensation records in the Washington State Department of Labor and Industries. Using the health insurance records, we identified those who had a diagnosis of substance abuse during the two-year period 1990-1991. Using the workers' compensation records, we were then able to compare injury rates for those with substance abuse diagnoses with the rates for those without such diagnoses. The total cohort consisted of 7,895 laborers. Among the 422 who had a substance abuse diagnosis, the rate of time-loss injuries per 100 full-time equivalent workers was 15.1, compared with 10.9 among the remainder of the cohort. Most of the difference appeared in the 25-34-year age group, in which the rate of injury per 100 full-time equivalent workers was 23.6 for substance abusers, compared with a rate of 12.2 for non-substance abusers, for a statistically significant relative risk of 1.93. The study suggests that younger workers might be an appropriate target for interventions aimed at reducing the level of substance abuse as a way of preventing injuries on the job. Studies by others have indicated some degree of success in this direction through the use of employee assistance programs in which the worker is referred to specific programs or providers for treatment. The state legislature in Washington has recently passed legislation providing incentives for the use of employee assistance programs. More effort is needed to evaluate the effectiveness of such programs.

**Powers, R.A. 1998. "Substance Abuse." In *Clinical Child Psychiatry*, W.M. Klyklo, J. Kay, and D. Rube, eds., pp. 230-262. Philadelphia: W.B. Saunders Company.**

**Rao, U., N.D. Ryan, B. Birmaher, R.E. Dahl, D.E. Williamson, J. Kaufman, R. Rao, and B. Nelson. 1995. "Unipolar Depression in Adolescents: Clinical Outcome in Adulthood." *Journal of the American Academy of Child & Adolescent Psychiatry* 34(5):566-578.**

This study examined the longitudinal clinical course and adult sequelae of adolescent unipolar major depressive disorder (MDD) using a controlled longitudinal design. Subjects were 28 adolescents with systematically diagnosed unipolar MDD and 35 group-matched control subjects who participated in a cross-sectional electroencephalogram sleep and neuroendocrine study. Using standardized instruments, interviewers who were blind to subjects' initial diagnoses conducted follow-up clinical assessments 7 years later in 94 percent of the original cohort. The depressed group showed high rates of recurrence of MDD episodes during the interval period (69 percent). They also had elevated rates of new-onset bipolar disorder (19 percent). Twenty-three percent of subjects with an initial diagnosis of MDD had no additional depressive episodes after the index assessment. The rate of new onset of depression in the controls was 21 percent. Low socioeconomic status predicted recurrence of depressive episodes in the MDD group. MDD subjects with recurrence(s) and controls with new onset of depression during the follow-up period had significant psychosocial morbidity, as evidenced by disruption in interpersonal relationships and dissatisfaction with life and decrease in global functioning, compared with both MDD subjects with no further episodes and control subjects who had never been psychiatrically ill. These psychosocial deficits persisted after remission from depressive episode(s). Adolescent unipolar MDD predicts continued risk for recurrences with persistence of depressive episodes and psychosocial morbidity into adulthood. A sizable minority, however, have sustained periods of remission associated with good social adjustment.

**Reinherz, H.Z., R.M. Giaconia, A.M. Carmola-Hauf, M.S. Wasserman, and A.B. Silverman. 1999. "Major Depression in the Transition to Adulthood: Risks and Impairments." *Journal of Abnormal Psychology* 108(3):500-510.**

An ongoing longitudinal community study (N = 375) examined childhood risks and later adult impairments associated with 1-year DSM III-R diagnoses of major depression during the transition to adulthood. Risks from birth to age 9 were reported by mother, participants, and teachers. Teacher-reported hostility at age 6 predicted later depression. At age 9, self-perceptions of anxiety/depression, unpopularity, familial rejection, and abuse were potent risks. For men, neonatal and childhood health problems predicted later depression. For women, risks included family constellation, parental death, and poor academic achievement at age 9. Men and women who were depressed at age 18, age 21, or both demonstrated extensive psychosocial impairments in early adulthood, including poor overall functioning, interpersonal and behavioral problems, low self-esteem, and suicidality.

**Reinherz, H.Z., R.M. Giaconia, A.M. Carmola-Hauf, M.S. Wasserman, and A.D. Paradis. 2000. "General and Specific Childhood Risk Factors for Depression and Drug Disorders by Early Adulthood." *Journal of the American Academy of Child & Adolescent Psychiatry* 39(2):223-231.**

This study identifies childhood risk factors that predict depression and drug disorders by early adulthood, distinguishing between general risk factors for both disorders and specific risk factors for each individual disorder. Within a longitudinal community study (N = 360), familial and behavioral-emotional characteristics were assessed in early childhood (ages 5, 6, and 9 years). At age 21, the Diagnostic Interview Schedule, version III-revised, provided lifetime diagnoses of major depression and drug abuse/dependence. Sibling substance use disorders predicted depression and drug disorders for both genders. Feelings of anxiety, depression, and peer rejection were general predictors for females. Specific risk factors for depression were parental depression and anxious/depressed behavior in both genders and peer problems for males. Specific risk factors for drug abuse/dependence were larger family size, lower socioeconomic status, hyperactivity, attention problems, and aggression. Parental substance abuse and having younger parents were specific risk factors for drug disorders in males. Familial and behavioral-emotional risk factors for depression and drug disorders were primarily specific, suggesting separate pathways. The unique perspectives of multiple informants facilitate early identification.

**Reinherz, H.Z., R.M. Giaconia, B. Pakiz, A.B. Silverman, A.K. Frost, and E.S. Lefkowitz. 1993. "Psychological Risks for Major Depression in Late Adolescence: A Longitudinal Community Study." *Journal of the American Academy of Child & Adolescent Psychiatry* 32(6):1155-1163.**

An ongoing 14-year longitudinal study examined psychosocial antecedents of major depression in late adolescence in a community population. Subjects were 385 adolescents followed between the ages of 5 and 18 years. Early health, familial, behavior, academic, and environmental risks for major depression were identified using data collected at ages 5, 9, 15, and 18 years. At age 18, a lifetime diagnosis of major depression was assessed using the NIMH Diagnostic Interview Schedule (DIS-III-R). For males, neonatal health problems, dependence problems at age 5 years, perceived unpopularity and poorer perceptions of their

role in the family at age 9 years, remarriage of a parent, early family discord, and anxiety at age 15 years significantly increased the risk of developing major depression. Females with major depression, compared with nondepressed females, had older parents and came from larger families, and at age 9 years had greater perceived unpopularity and anxiety, lower self-esteem, and poorer perceptions of their role in the family. Depressed females also reported more stressful life events, including death of parent and pregnancy. Underscoring the importance of early psychosocial factors in the later development of major depression and pointing to specific risks, these findings can aid in developing strategies for prevention and early intervention.

**Resnick, M.D., P.S. Bearman, R.W. Blum, K.E. Bauman, K.M. Harris, J. Jones, J. Tabor, T. Beuhring, R.E. Sieving, M. Shew, M. Ireland, L.H. Bearinger, and J.R. Udry. 1997. "Protecting Adolescents from Harm: Findings from the National Longitudinal Study on Adolescent Health." *Journal of the American Medical Association* 278(10):823-832.**

The main threats to adolescents' health are the risk behaviors they choose. The authors of this article explain that how their social context shapes their behaviors is poorly understood. As a result, the authors identified risk and protective factors at the family, school, and individual levels as they relate to four domains of adolescent health and morbidity: emotional health, violence, substance use, and sexuality. The authors conducted cross-sectional analysis of interview data from the National Longitudinal Study of Adolescent Health. A total of 12,118 adolescents in grades 7 through 12 drawn from an initial national school survey of 90,118 adolescents from 80 high schools plus their feeder middle schools, completed interviews in their homes. Eight areas were assessed: emotional distress; suicidal thoughts and behaviors; violence; use of three substances (cigarettes, alcohol, marijuana); and two types of sexual variables (age of sexual debut and pregnancy history). Independent variables included measures of family context, school context, and individual characteristics. Parent-family connectedness and perceived school connectedness were protective against every health risk behavior measure except history of pregnancy. Conversely, ease of access to guns at home was associated with suicidality and violence. Access to substances in the home was associated with use of cigarettes, alcohol, and marijuana among all students. Working 20 or more hours a week was associated with emotional distress of high school students, cigarette use, alcohol use, and marijuana use. Appearing "older than most" in class was associated with emotional distress and suicidal thoughts and behaviors among high school students; it was also associated with substance use and an earlier age of sexual debut among both junior and senior high students. Repeating a grade in school was associated with emotional distress among students in junior high and high school and with tobacco use among junior high students. On the other hand, parental expectations regarding school achievement were associated with lower levels of health risk behaviors; parental disapproval of early sexual debut was associated with a later age of onset of intercourse. The authors conclude that family and social contexts, as well as individual characteristics, are associated with health and risky behaviors in adolescents. The results should assist health and social service providers, educators, and others in taking the first steps to diminish risk factors and enhance protective factors for young people.

**Reynolds, G.S., and W.E. Lehman. 2003. "Levels of Substance Use and Willingness to Use the Employee Assistance Program." *Journal of Behavioral Health Services & Research* 30(2):238-248.**

Individuals with drinking and drug problems may become particularly reluctant to seek help. To remove barriers to services, more needs to be understood about factors that influence help-seeking decisions. The authors hypothesized that certain social psychological influences (attitudes, group cohesion, trust in management) might buffer a reluctance to use services provided by an external Employee Assistance Program (EAP). A random sampling of municipal employees (n = 793) completed anonymous questionnaires that assessed willingness to use the EAP, individual drinking and drug use, attitudes toward policy, work group cohesion, and trust in management. Data from the questionnaires were analyzed with multivariate regression analyses to examine the interacting effects of substance abuse and proposed moderators (gender, race, awareness of the EAP, perceptions of policy, cohesion) on willingness to use the EAP. The results demonstrated that although substance abusers were less willing to use the EAP than were nonusers, substance abusers who were aware of the EAP, who had favorable attitudes toward policy, and who did not tolerate coworker substance abuse were as willing to use the EAP as were nonusers. The results also showed that employees with greater awareness of the EAP, support for policy, and perceptions of work group cohesion reported significantly greater willingness to use the EAP than did employees with relatively less awareness of the EAP, policy support, and cohesion. Workplace prevention efforts that are designed to increase the use of EAP services should intentionally target the workplace environment and social context. Creating the awareness and favorability of the EAP, policy, and work group cohesion might buffer substance abusers' reluctance to seek help.

**Rice, C., R. Longabaugh, and R.L. Stout. 1997. "A Comparison Sample Validation of 'Your Workplace': An Instrument to Measure Perceived Alcohol Support and Consequences from the Work Environment." *Addictive Behaviors* 22(5):711-722.**

This paper addresses the psychometric properties of Your Workplace (YWP), an instrument developed to measure perceived influence of workplace norms and attitudes on alcohol involvement and the experience of adverse consequences. Data were collected from a large, geographically dispersed sample of aftercare and outpatients recruited for a multisite clinical trial of alcoholism treatments, Project MATCH. Administration of YWP at the baseline assessment was restricted to workforce participants. A confirmatory factor analysis addressed instrument structure. Internal consistency and concurrent association between measures of general social support, alcohol-specific support, and alcohol involvement were examined. YWP scales were found to have adequate internal consistency reliability. Correlation between YWP scales and concurrent measures of alcohol involvement were among the strongest found. Identification of workplace influences on alcohol involvement allows refined assessment and fosters a comprehensive approach to treatment of alcoholism.

**Richmond, J. 2000. "New Partnerships and New Systems: Supporting Young People's Growth and Job Readiness." *CYD Journal* 1(1):20-25.**

This article profiles 7 Community Youth Development programs that are making a difference in young people's lives. The programs share common themes, such as merging youth programs

with economic development efforts, job training, and education. The article highlights the Living Classroom Foundations, an organization that served more than 50,000 students in 35 programs in 2000. The program is based on the philosophy that students respond to real-world academics and the “world of work” far more readily than they do to traditional classrooms. The article also highlights the Latino Community Development Agency in Oklahoma City, a multigenerational program that brings together numerous community agencies and businesses to offer programs to youth and their families. The Food Project offers a 7-week farm program in which participants grow organic produce and sell the produce at the Boston Farmer’s Market. The Quitman County Community Development Organization in Mississippi has worked with Black churches to develop joint community programs such as a homeless shelter, a Meals on Wheels program, a thrift store, and a food pantry. The author suggests that giving youth responsibility and expecting accountability is at the core of most successful youth development initiatives. The author highlights additional community development programs and suggests that engaging communities, educational institutions, youth-serving agencies, and parents to plan and implement learning opportunities for all young people is an ambitious, yet achievable agenda.

**Roberts, L.J., D.J. Neal, D.R. Kivlahan, J.S. Baer, and G.A. Marlatt. 2000. “Individual Drinking Changes Following a Brief Intervention Among College Students: Clinical Significance in an Indicated Preventive Context.” *Journal of Consulting and Clinical Psychology* 68(3):500-505.**

This study investigated the clinical significance of previously reported statistically significant mean reductions in drinking and related problems among college students in a randomized trial of a brief indicated preventive intervention (Marlatt et al., 1998). Data were analyzed over a 2-year follow-up for participants from a high-risk intervention group (n = 153), a high-risk control group (n = 160), and a functional comparison group (n = 77). A risk cut-point for each dependent measure was based on the functional comparison group distribution. Compared with the high-risk controls, more individuals in the high-risk intervention group improved and fewer worsened, especially on alcohol-related problems and, to a lesser extent, on drinking pattern variables. These data from a prevention context clarify the magnitude and direction of individual change obscured by group means.

**Roman, P., and T. Blum. 1995. “Alcohol: A Review of the Impact of Worksite Interventions on Health and Behavioral Outcomes.” *American Journal of Health Promotion* 11(2):136-149.**

This article reviews, evaluates, and summarizes research published in scientific journals linking alcohol-related interventions in the worksite to either individual or organizational outcomes. A review of the literature published in peer-review journals between 1970 and 1995 identified 24 articles that reported the results of studies on the impact of worksite programs on alcohol control and on health and behavioral outcomes. There is strong suggestive evidence and some conclusive evidence that worksite interventions, including core components of employee assistance programs, are effective in rehabilitating employees with alcohol problems. There is suggestive and conclusive evidence that worksite training oriented toward alcohol problems affects the attitudes of supervisors and employees for reasonable periods after the completion

of training. Investment in worksite interventions directed at reducing alcohol-related problems appears to be a sound strategy, although considerably more research is needed.

**Roman, P.M., and T.C. Blum. 1999. "Employee Assistance Programs and Other Workplace Interventions." In *Textbook of Substance Abuse Treatment, Second Edition*, M. Galanter and H.D. Kleber, eds., pp. 423-435. Washington, DC: American Psychiatric Press.**

This chapter introduces the historical development and contemporary use of employee assistance programs (EAPs). While EAPs are the primary mechanism for addressing workplace substance use problems, several other strategies are briefly examined. EAPs were made possible by a gradual transformation in the public's perceptions of alcoholics during the twentieth century, from skid-row winos to upstanding members of society with drinking problems. A second major force in the development of EAPs was the application of the philosophy of Alcoholics Anonymous to the workplace in the form of industrial alcoholism treatment. But these programs had flaws: they relied on supervisors to identify which employee problems were alcohol related, they were focused solely on alcohol, and they attached stigma to employees who sought treatment. As EAPs appeared in the 1970s, they shifted the focus from the individual to a variety of behavioral problems, substance abuse among them, that could affect workplace productivity. Today, an EAP is a way for employers to identify and help employees who are experiencing problems. Employees can be referred for treatment, but often a limited number of counseling sessions are carried out by EAP staff members. The authors identify six different functions served by EAPs: retention of employees the company has invested in, reduction of supervisory responsibility for involvement in substance abuse problems, provision of due process for employees, containment of health care costs for employees and dependents, management of employees' substance abuse treatment, and transformation of workplace attitudes about substance abuse and treatment. The authors point out that post-treatment follow-up is a weakness of many EAPs, as it is with substance abuse treatment in general. But EAPs have an advantage over traditional treatment because the people using their services already have the stability of regular employment. Finally, the authors briefly discuss substance strategies that can complement EAPs: drug testing, health promotion and stress management, peer intervention programs (often seen in professional associations such as the American Bar Association or American Medical Association), and member assistance programs (often seen in labor unions).

**Roman, P., and T. Blum. 2002. "The Workplace and Alcohol Prevention." *Alcohol Research and Health* 26(1):49-57.**

Workplace programs to prevent and reduce alcohol-related problems among employees have considerable potential. For example, because employees spend a lot of time at work, coworkers and supervisors may have the opportunity to notice a developing alcohol problem. In addition, employers can use their influence to motivate employees to get help for an alcohol problem. Many employers offer employee assistance programs as well as educational programs to reduce employees' alcohol problems. However, several risk factors for alcohol problems exist in the workplace domain. Further research is needed to develop strategies to reduce these risk factors.

**Safron, D.J., J.E. Schulenberg, and J.G. Bachman. 2001. "Part-Time Work and Hurried Adolescence: The Links among Work Intensity, Social Activities, Health Behaviors, and Substance Use." *Journal of Health and Social Behavior* 42(4):425-449.**

The authors examined adolescents' part-time work intensity and its relation to participation in various activities as well as substance use. The authors considered mechanisms articulated in two theoretical perspectives on how high work intensity is associated with substance use: (1) the "time trade-off perspective," and (2) "the precocious development perspective." The authors drew nationally representative data from the Monitoring the Future project from eighth, tenth, and twelfth grade students (overall N = 380,000) to address their research questions. Work intensity was found to be linked to more time spent on unstructured social activities but to less time spent engaged in sports, health behaviors, and school-related activities. Social time use and health behaviors were found to partially mediate the relationship between work hours and substance use. Overall, results provide evidence for a combination of both perspectives.

**Sanford, M., D. Offord, K. McLeod, M. Boyle, C. Byrne, and B. Hall. 1994. "Pathways into the Work Force: Antecedents of School and Work Force Status." *Journal of the American Academy of Child & Adolescent Psychiatry* 33(7):1036-1046.**

The study aimed to identify risk factors for specific pathways into the workforce using data from the Ontario Child Health Study Follow-up. Potential predictor variables were derived from data collected in 1983 on adolescents aged 13 to 16 years. The subjects were followed up 4 years later and the school/workforce outcome was determined. Bivariate and multivariate statistical analyses were used to identify variables with a strong independent association with this outcome. Subjects in the workforce were four times more likely than those attending school to have come from a low-income family and at least two times more likely to have a family background of low maternal education, to have failed a grade, or to have used substances heavily during early adolescence. Subjects with two or more of these risk factors were likely to be in part-time work or unemployed. Preventive interventions should be targeted at children from poor families, or who fail at school, or show early onset of substance abuse and other deviant behaviors. Studies are needed to further elucidate the relationship between these risk factors and pathways into the workforce and beyond.

**Scanlon, W.F. 1991. *Alcoholism and Drug Abuse in the Workplace: Managing Care and Costs Through Employee Assistance Programs, Second Edition*. New York: Praeger.**

Substance abuse is a problem in the workplace that employers are uniquely positioned to address. "Job jeopardy" is a powerful motivator for people to seek treatment and is an advantage employers have in treating substance abuse. This book focuses on strategic interventions that employee assistance programs (EAPs) can make at control points (i.e., before problems become serious and costly). The book includes histories of substance abuse legislation and interventions that address workplace substance abuse. The book also includes an introduction to the roles managed care organizations and EAPs play in treating substance abuse in the workplace. The vast majority of companies (nearly 90 percent) with more than 5,000 employees have EAPs, but few smaller companies do. Because the majority of employers in the United States are small businesses, only one-third of employees are covered

by EAPs. EAPs make sense both from a financial and a humanistic perspective. Based on use data from the general population, one can estimate that 3.5 percent of employees have substance use problems. It is further estimated that 25 percent of these substance-abusing employees' wages are lost. If an EAP can help half of these employees, it can help a company recover one-half of 1 percent of its entire payroll—a sizable sum for large employers. Other ways of performing a cost-benefit analysis also demonstrate the efficacy of EAPs. Work performance is improved (accidents, discipline, and sickness decrease) and cost efficiency is maximized (absenteeism decreases, accuracy increases). Successful EAPs also provide good public relations. From the humanistic perspective, EAPs are a workplace perquisite (like health insurance, pension, etc.) that improve the lives not just of employees but their families as well. In addition to enhancing employee relations, EAPs can facilitate equal employment opportunity and a healthier workforce. Employees who are content are better workers.

To be successful, EAPs must “market” themselves to employees and supervisors. The author describes this as a four-step process: (1) get the employees' attention, (2) develop interest in seeking treatment, (3) create a desire in employees to stop abusing substances, and (4) convince employees to take action. Employees come to EAPs through self-referral and supervisor referrals. Supervisors need to be trained in the process of referring employees, especially in the final stage, which involves a “constructive confrontation.” Supervisors must also learn to (1) recognize substance abuse problems in employees; (2) document problems in work performance; (3) take escalating action in the form of warnings, corrective interviews, and suspensions; and (4) reintegrate employees into the work environment when they return from treatment. The role of EAP counselors can be ambiguous (is their main loyalty to the employee or the employer?), but the author suggests that they be thought of as a broker who deals with both employer and employee and has the interests of both at heart. The critical tasks of the EAP counselor are to (1) overcome employee denial, (2) motivate the employee to change, (3) refer employee to appropriate treatment (e.g., inpatient, outpatient); (4) facilitate reentry to job, (5) provide ongoing social support, and (6) monitor employee's ongoing change efforts and offer feedback.

Before contracting with an external EAP, a company should hire a consultant to help it evaluate candidates and conduct site visits. Once hired, the external EAP should conduct an audit of the workplace and design a program and services specifically for that workplace. Companies are free to contract with an external EAP for a year, evaluate the benefits, and set up their own internal EAP based on what they have learned. Some external EAPs will even help companies set up an internal program. Small companies that cannot afford to hire an external EAP or set up their own can join with other small companies to form an EAP consortium and purchase the services of an external EAP or form a multisite internal EAP.

**Schaps, E., and D. Solomon. 2003. “The Role of the School's Social Environment in Preventing Student Drug Use.” *Journal of Primary Prevention* 23(3):299-328.**

Correlational and intervention studies of school environmental factors associated with student drug use and prevention are summarized. Major factors that emerge in the correlational studies are school supportiveness, sense of community, and opportunities for students to interact and to exert influence. Similar factors are involved in the intervention studies, with the development of a sense of community and attachment to school central, although the means by which these

are approached differ across projects. A common conclusion seems to be that a supportive environment increases students' attachment to school and thereby their inclination to abide by the school's norms and values.

**Schinke, S., P. Brounstein, and P. Gardner. 2002. *Science-Based Prevention Programs and Principles*. Rockville, MD: Center for Substance Abuse Prevention, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.**

**Schulenberg, J., J.L. Maggs, K.J. Steinman, and R.A. Zucker. 2001. "Development Matters: Taking the Long View on Substance Abuse Etiology and Intervention during Adolescence." In *Adolescents, Alcohol, and Substance Abuse; Reaching Teens through Brief Interventions*, P.M. Monti, S.M. Colby, and T.A. O'Leary, eds., pp. 19-57. New York: Guilford Press.**

The authors argue in this chapter that alcohol and other drug use among young people is embedded in the developmental transitions that take place during adolescence and the transition to adulthood. Substance use, thus, must be examined in the context of these transitions and over time. Increased health risks during adolescence are best understood in the context of significant transitions: pubertal and cognitive development, affiliative transitions, achievement transitions, and identity transitions. The authors propose five different conceptual models for understanding the relation between developmental transitions and health risks: 1) health risks can be a possible but not ineluctable result of multiple developmental transitions; 2) health risks can be the result of the goodness of fit between an adolescents and their contexts; 3) developmental transitions can moderate ongoing health risks; 4) risk-taking and substance in particular can be viewed as a way to negotiate developmental transitions; 5) developmental transitions increase the effects of chance events. The many transitions adolescents undergo provide opportunities to intervene and change courses of behavior that are already in flux. Changing risky behaviors while individuals are young also promotes enhanced health and well-being throughout life. Multiple paths lead individuals to first substance use and to escalation to abuse; effective prevention programs will likely be those that address as many of these paths as possible.

**Schuster, C., P.M. O'Malley, J.G. Bachman, L.D. Johnston, and J. Schulenberg. 2001. "Adolescent Marijuana Use and Adult Occupational Attainment: A Longitudinal Study from Age 18 to 28." *Substance Use & Misuse* 36(8):997-1014.**

The authors used data from a nationally representative longitudinal sample to examine the relationships of marijuana use by high school seniors to occupational attainment 10 years later. Analyses were conducted separately by gender, with and without controlling for other variables. Control variables, all measured when respondents were seniors, were academic performance, educational aspirations, and occupational aspirations. Results indicate that the influence of marijuana use on occupational attainment is considerably different for males and females.

**Schwenk, C.R. 1998. "Marijuana and Job Performance: Comparing the Major Streams of Research." *Journal of Drug Issues* 28(4):941-970.**

Estimates of the cost to U.S. companies of employee marijuana use run to billions of dollars. Reviewing studies on the topic, the author argues that the relationship between marijuana use and job performance is far from clear. Two contradictory conclusions that studies have come to are that marijuana use is linked to both higher wages and fewer hours worked. In examining how marijuana use could drive wages up and hours down, the author concludes that marijuana's effect on job performance does not explain these data. Rather, employees who make more money and have more free time smoke more marijuana. Likewise, the author examines reports that employees who test positive for marijuana in pre-employment screens are more likely to experience accidents on the job and job turnover. The author argues that this connection is spurious and could be attributable to a third variable: pre-employment drug screens only catch careless marijuana users (i.e., ones who are more likely to get into accidents and less likely to keep a job). The author calls for research into employee marijuana use that will take account of the complexity and contradictions in existing research.

**Schwiebert, V.L., K.A. Sealander, and M.L. Bradshaw. 1998. "Preparing Students with Attention Deficit Disorders for Entry into the Workplace and Postsecondary Education." *Professional School Counseling* 2(1):26-32.**

Early intervention is necessary to minimize effects of attention deficit hyperactivity disorder (ADHD) in adolescence and adulthood. ADHD places youth at increased risk for substance abuse, school dropout, poor vocational achievement, social rejection by peers, oppositional behaviors, and delinquency. For these reasons, early identification and treatment of problem behaviors that indicate ADHD is important. Strategies for identifying preparation issues in high school and preparing these students for work or postsecondary education are provided by the authors. Characteristics of ADHD students are reviewed along with coexisting conditions, particularly academic underachievement.

**Scott, D.M., J.L. Surface, D. Friedli, and T.W. Barlow. 1999. "Effectiveness of Student Assistance Programs in Nebraska Schools." *Journal of Drug Education* 29(2):165-174.**

The authors of this article investigated whether Nebraska schools with Student Assistance Programs (SAP) are associated with reduced adolescent alcohol use and a higher level of academic achievement than students from schools without a SAP. To do so, in 1992, they administered the Toward a Drug Free Nebraska (TDFN) survey to 3,353 students in grades 7 to 12 at 83 Nebraska schools. A second survey, the TDFN "team activity report" collected from each school's team, reported the presence of a SAP (n = 34 schools) or absence of a SAP (n = 49 schools). Student responses for alcohol use and academic achievements were linked with the presence of an SAP through use of a school identification number on both surveys. Students from schools with an SAP reported a lower use of alcohol in the last 30 days, compared with students from schools without an SAP program, and they also reported a significant difference in academic achievement. While this study used post hoc analysis of data, results suggest lower alcohol use and higher academic achievement among students from

SAP schools. Given SAPs' popularity, these trends suggest that further research should be conducted to demonstrate the effectiveness of student assistance programs.

**Sheeber, L., H. Hops, A. Alpert, B. Davis, and J. Andrews. 1997. "Family Support and Conflict: Prospective Relations to Adolescent Depression." *Journal of Abnormal Child Psychology* 25(4):333-344.**

The relations between family support, family conflict, and adolescent depressive symptomatology were examined longitudinally in a sample of 231 female and 189 male adolescents and their mothers. Structural equation models revealed that less supportive and more conflictual family environments were associated with greater depressive symptomatology both concurrently and prospectively over a 1-year period. Conversely, adolescent depressive symptomatology did not predict deterioration in family relationships. Depressive symptomatology and, to a greater extent, family characteristics showed high levels of stability over the 1-year period. Counter to expectations, the relations between family variables and depressive symptomatology were similar for boys and girls. The results suggest that the quality of family interactions is relevant for understanding the development of depressive symptoms in adolescents.

**Simons, J., C.J. Correia, and K.B. Carey. 2000. "A Comparison of Motives for Marijuana and Alcohol Use Among Experienced Users." *Addictive Behaviors* 25(1):153-160.**

Motivational models suggest that individuals use substances to achieve desired effects. Given different pharmacological effects across drug classes, and variations in social context, one would expect that the motives instigating use differ by drug class. However, commonalities in motives across drugs have also been observed. The purpose of this study was to examine similarities and differences across a common set of motives for alcohol and marijuana among experienced users of both drugs. Participants were 46 college students (21 women) who completed a motives assessment twice, once for marijuana and once for alcohol. All had used each drug 60 or more times in their lifetime. Social motives were more highly endorsed for alcohol than marijuana. Expansion motives were more highly endorsed for marijuana. Enhancement motives were more highly endorsed for marijuana than alcohol among women but not men. Endorsement of coping and conformity motives did not differ across drugs. Experienced users of marijuana and alcohol discriminate between their reasons for using the two drugs. These findings are discussed with regard to the differentiation between and commonalities among substances of abuse.

**Slesnick, N., R.J. Meyers, M. Beade, and D.H. Segelken. 2000. "Bleak and Hopeless No More: Engagement of Substance-Abusing Runaway Youth and Their Families." *Journal of Substance Abuse and Treatment* 19:215-222.**

Treatment of adolescents with substance use problems is made more difficult by their lack of motivation to change, difficulty engaging in treatment, and early dropout. Runaway/homeless shelters document high levels of substance abuse among runaway youth, at least double that of school youth. These youth present a constellation of problems; research suggests that this population may be unique in the range and intensity of associated problems. Most studies to date have collected self-report data on these youth; virtually no research has examined treatment effectiveness with the population. Given the void of treatment outcome research with

these youth, there is need for identifying potent interventions. Given that issues of engagement and retention must assume prominence in the development of new treatments, this article presents a family-based treatment engagement strategy successfully employed with a sample of substance-abusing youth staying in a southwestern shelter. Youth and primary caretakers are engaged separately by the therapist utilizing motivating factors appropriate to context of the families' lives and to the developmental position of the client.

**Smith, G.T., and K.G. Anderson. 2001. "Personality and Learning Factors Combine to Create Risk for Adolescent Problem Drinking: A Model and Suggestions for Intervention." In *Adolescents, Alcohol, and Substance Abuse; Reaching Teens through Brief Interventions*, P.M. Monti, S.M. Colby, and T.A. O'Leary, eds., pp. 109-141. New York: Guilford Press.**

This chapter describes the authors' model of risk for adolescent problem drinking that integrates personality and learning risk factors. Their acquired preparedness model argues that disinhibited adolescents learn the reinforcing aspects of risky behaviors at the expense of the punishing aspects. When these disinhibited adolescents encounter alcohol, there is a bias for the formation of positive expectancies over negative expectancies. Alcohol expectancies predict the onset of alcohol-related problems. So, adolescents' expectations for alcohol mediate the influence of disinhibition on their drinking. The authors advocate motivational interviewing and expectancy challenges in interventions with adolescent drinkers. Interventions aimed at improving attention to the punishing aspects of drinking and at helping individuals better remember the negative consequences of drinking are suggested by the authors. However, more research is needed on the role that attention and memory play before these interventions are warranted.

**Snow, D.L., S.C. Swan, and L. Wilton. 2003. "A Workplace Coping-Skills Intervention to Prevent Alcohol Abuse." In *Preventing Workplace Substance Abuse: Beyond Drug Testing to Wellness*. J.B. Bennett and W.E.K. Lehman, eds., pp. 57-96. Washington, DC: American Psychological Association.**

The authors of this book chapter reported that the prevalence and severity of alcohol problems result in substantial direct and indirect social and economic costs in the workplace. In this chapter, they first present a model, central to prevention research and intervention, that focuses on the identification and modification of key risk and protective factors that influence such health-related behaviors and outcomes as alcohol use and abuse. The authors then summarize research linking selected risk and protective factors to alcohol use, namely work and work-family stressors, social support, and individual coping strategies. They then describe a workplace coping-skills intervention that is based on that model and present findings from two studies that examined the effects of the intervention on employee alcohol use. The authors conclude by discussing lessons learned and suggesting possible directions for future workplace research and intervention strategies.

**Sorohan, E.F. 1995. "Parents Preventing Drug Abuse." *Training & Development* 49(8):14.**

In 1993 and 1994, the Work in America Institute ran a nationwide pilot of the Parent Connection, a substance abuse prevention program. The program consists of five 1-hour seminars

designed to involve parents in substance abuse prevention for their children by teaching parents communication skills. In this article, the Institute reports that the workplace is a setting in which parents can learn how to steer their children away from substance abuse. Nine hundred blue- and white-collar employees from 12 different companies participated. Nine of the 12 companies continued to offer the program after the pilot period ended.

**Steinberg, L., S. Fegley, and S.M. Dornbusch. 1993. "Negative Impact of Part-Time Work on Adolescent Adjustment: Evidence from a Longitudinal Study." *Developmental Psychology* 29(2):171-180.**

Researchers disagree over whether negative correlates of extensive part-time employment during adolescence are consequences of work or are due to differential selection into the labor force. Students who are more inclined to use drugs before they enter the labor force may have less interest in school and be more likely to seek part-time work. This study examines the over-time relation between school-year employment and adjustment in a heterogeneous sample of approximately 1,800 high school sophomores and juniors. Analyses indicate both significant selection effects and negative consequences of employment. Before working, adolescents who later work more than 20 hours per week are less engaged in school and are granted more autonomy by their parents. However, taking on a job for more than 20 hours per week further disengages youngsters from school, increases delinquency and drug use, furthers autonomy from parents, and diminishes self-reliance. With respect to problem behaviors such as delinquency and substance use, the clearest effects occur at the transition into the labor force. Increasing the number of hours worked for adolescents who already have jobs does not result in dramatic increases in problem behaviors. Leaving the labor force after working long hours leads to improved school performance but does not reverse the other negative effects.

**Substance Abuse and Mental Health Services Administration (SAMHSA). 2002. "Employers Urged to Target Younger Employees in Drug Prevention Efforts." *Workplace Substance Abuse Advisor* 17(3):1-6.**

**Substance Abuse and Mental Health Services Administration (SAMHSA). 2002. *Results from the 2001 National Household Survey on Drug Abuse: Volume I. Summary of National Findings*. Office of Applied Studies, NHSDA Series H-17, DHHS Publication No. SMA 02-3758. Rockville, MD: SAMHSA.**

**Substance Abuse and Mental Health Services Administration (SAMSHA). 2003. *Results from the 2002 National Survey on Drug Use and Health: National Findings*. Office of Applied Studies, NHSDA Series H-22, DHHS Publication No. SMA 03-3836. Rockville, MD: SAMHSA.**

This report presents information from the National Survey on Drug Use and Health (NSDUH)—formerly the National Household Survey on Drug Abuse (NHSDA)—which annually surveys about 67,500 Americans 12 years and older on use of alcohol, tobacco, and illicit substances. The report breaks out substance use by age, gender, race/ethnicity, education, employment, and geographic region. It also includes chapters on trends in substance use and prevention measures for youth. NSDUH data are compared with findings from Monitoring the Future on use of alcohol, cigarettes, marijuana, cocaine, ecstasy, and LSD. This study finds that in 2002 over 11 percent of youth aged 12 to 17 used illicit substances. This rate was second only to

that of young adults aged 18 to 25, over one-fifth of whom used illicit substances. Over 28 percent of people aged 12 to 20 drank alcohol in the month preceding the survey; nearly 20 percent of those who drank were binge drinkers; over 6 percent were heavy drinkers. Among youth aged 12 to 17, girls were more likely to smoke than boys (13.6 percent vs. 12.3 percent).

**Swadi, H. 1999. "Individual Risk Factors for Adolescent Substance Use." *Drug and Alcohol Dependence* 55(3):209-224.**

Identification of risk factors that influence initiation and escalation of drug use in the adolescent population is the approach that has gained currency in addressing the problem of adolescent substance abuse. The wide array of risk factors involved can be condensed into three main domains: constitutional predisposition, environmental factors (family and peers) and life events. This has been complemented by a surging interest in protective factors. Recent research evidence has been helpful in defining the direction and strategy of prevention efforts. A definite trend has emerged: family influences are being increasingly targeted. The rationale for this shift seems to come from the observation that home environment, family relationships, and parenting styles are almost always involved as risk factors, mediators, or as protective factors.

**Taylor, J., S. Malone, W.G. Iacono, and M. McGue. 2002. "Development of Substance Dependence in Two Delinquency Subgroups and Nondelinquents from a Male Twin Sample." *Journal of the American Academy of Child & Adolescent Psychiatry* 41(4):386-393.**

The effect of delinquency subtype on the development of substance dependence symptoms was examined. It was proposed that early-onset delinquents possess characteristics that increase their likelihood of developing substance dependence problems earlier and more rapidly than late-onset delinquents and nondelinquents. The development of alcohol, nicotine, and cannabis dependence symptoms (DSM-III-R) was examined over a 6-year period of adolescence (age 11-17) among 36 early-onset delinquent, 86 late-onset delinquent, and 25 nondelinquent boys from a large epidemiological twin sample. Multilevel/random coefficients models were used to compare groups on the rate of growth in number of symptoms over time. Early-onset delinquents showed an earlier onset and a faster rate of increase in the number of cannabis and nicotine dependence symptoms than late-onset delinquents and controls. Both delinquent groups had a more rapid increase in alcohol dependence symptoms than controls. The data showed that early-onset delinquency is associated with earlier onset of substance use disorder symptoms and more rapid acceleration of problems with drugs than late-onset delinquency. Treatments for boys with early-onset delinquency should account for their increased risk for drug use problems in adolescence and the potential effects of those problems on the course of antisocial behavior.

**Tobler, N.S. 1986. "Meta-Analysis of 143 Adolescent Drug Prevention Programs: Quantitative Outcome Results of Program Participants Compared to a Control or Comparison Group." *Journal of Drug Issues* 16(4):537-567.**

This study presents a meta-analysis of the outcome results for 143 adolescent drug prevention programs to identify the most effective program modalities for reducing teenage drug use. The meta-analysis techniques used by Glass et al. (1981) provided a systematic approach for the accumulation, quantification, and integration of the numerous research findings. Five major

modalities were identified and their effect sizes computed for five distinctly different outcomes: Knowledge, Attitudes, Use, Skills, and Behavior measures. The magnitude of the effect size was found dependent on the outcome measure employed and the rigor of the experimental design. These factors were controlled for through use of a standard regression analysis. Peer Programs were found to show a definite superiority for the magnitude of the effect size obtained on all outcome measures. On the ultimate criteria of drug use, Peer Programs were significantly different than the combined results of all the remaining programs ( $p < .0005$ ). Peer Programs maintained high effect size for alcohol, soft drugs and hard drugs, as well as for cigarette use. Recommendations are made concerning the effectiveness of the underlying theoretical assumption for the different program modalities. Future programming implications are discussed as Peer Programs were identified as effective for the average school-based adolescent population, but the Alternatives programs were shown to be highly successful for the at-risk adolescents such as drug abusers, juvenile delinquents, or students having school problems.

**Tobler, N.S., and H.H. Stratton. 1997. "Effectiveness of School-Based Drug Prevention Programs: A Meta-Analysis of the Research." *Journal of Primary Prevention* 18:71-128.**

Effectiveness of different types of drug prevention programs was examined in a meta-analysis of 120 school-based programs (fifth through twelfth) that evaluated success on self-reported drug use measures. The authors conducted hypothesis tests using Weighted Least Squares regressions of an a priori classification scheme that was based on program content and its method of delivery. Two major types of programs were identified: Interactive and Non-Interactive. Six factors related to program effectiveness (sample size, targeted drug, type of control group, special populations, type of leader, and attrition) were included as covariates. The superiority of the Interactive programs was both clinically and statistically significant to the Non-Interactive programs for tobacco, alcohol, marijuana, and illicit drugs and for all adolescents including minority populations. The larger Interactive programs were less effective, although still significantly superior to the Non-Interactive programs, which suggests implementation failures.

**Tobler, N.S., M.R. Roona, P. Ochshorn, D.G. Marshall, A.V. Streke, and K.M. Stackpole. 2000. "School-Based Adolescent Drug Prevention Programs: 1998 Meta-Analysis." *Journal of Primary Prevention* 20(4):275-336.**

The authors reported on a meta-analysis of 207 universal school-based drug prevention programs that compared the self-reported drug use of treatment to control or comparison youth. Programs were classified into Interactive and Non-Interactive groups based on a combination of content and delivery method. Weighted categorical and weighted regression methods were used to determine the attributes that most effectively reduce, delay, or prevent drug use, including program size, type of control group and leader, attrition, target drug, intensity, grade, special population, and level of drug use. Program type and size were found to be significant predictors of effectiveness. Non-Interactive lecture-oriented prevention programs that stressed drug knowledge or affective development showed small effects. Interactive programs that fostered development of interpersonal skills showed significantly greater effects that decreased with large-scale implementations.

**Trudeau, J.V., D.K. Deitz, and R.F. Cook. 2002. "Utilization and Cost of Behavioral Health Services: Employee Characteristics and Workplace Health Promotion." *Journal of Behavioral Health Services & Research* 29(1):61-74.**

The authors of this article sought to (1) model demographic and employment-related influences on behavioral health care utilization and cost; (2) model behavioral health care utilization and cost influences on general health care cost, job performance, and earnings; and (3) assess workplace-based health promotion's impact on these factors. Behavioral health care utilization was more common in employees who were female, over age 30, with below-median earnings, or with above-median general (non-behavioral) health care costs. Among employees utilizing behavioral health care, related costs were higher for employees with below-median earnings. Employees utilizing behavioral health care had higher general health care costs and received lower performance ratings than other employees. Health promotion participants were compared with a nonparticipant random sample matched on gender, age, and pre-intervention behavioral health care utilization. Among employees without pre-intervention behavioral health care, participants and nonparticipants did not differ in post-intervention utilization. Among employees utilizing behavioral health care adjusting for pre-intervention costs, participants had higher short-term post-intervention behavioral health care costs than nonparticipants.

**Unger, D.D., and R. Luecking. 1998. "Work in Progress: Including Students with Disabilities in School-to-Work Initiatives." *Focus on Autism and Other Developmental Disabilities* 13(2):94-100.**

Since the School-to-Work Opportunities Act (STWOA) was passed by Congress in 1994, 37 states and a host of localities have received federal grants to build systems that link learning in classrooms with the skills required by the nation's youth to succeed in the workplace. School-to-Work (STW) partnerships are forming in communities throughout the country, and thousands of schools, educators, employers, labor unions, community organizations, parent groups, and other stakeholders are participating in these partnerships. The purpose of this article is to provide a synopsis of the STWOA; describe what states and localities are doing to include youth with disabilities in STW initiatives; and offer recommendations to special educators, rehabilitation professionals, students with disabilities, and parents for increasing the participation of youth with disabilities in a wide range of STW activities.

**Valois, R.F., A.C. Dunham, K.L. Jackson, and J. Waller. 1999. "Association between Employment and Substance Abuse Behaviors among Public High School Adolescents." *Journal of Adolescent Health* 25(4):256-263.**

The authors examined the relationship between adolescents' after-school and weekend employment and substance abuse behaviors in a cross-sectional sample of public high school students in South Carolina. To do so, the authors used the Centers for Disease Control and Prevention Youth Risk Behavior Survey (YRBS) to secure usable data from 4,800 subjects. They found that 30 percent of White males, 29 percent of White females, and 20 percent of Black males and females worked at a job for pay during the academic year. For White males, employment ranging from 11 to 15 hours and 26 to  $\geq 31$  hours was associated with cigarette smoking, working from 11 to  $\geq 31$  hours was associated with alcohol use, working  $\geq 31$  hours was associated with binge drinking, working from 26 to  $\geq 31$  hours was associated with

marijuana use, and working from 26 to 30 hours was associated with cocaine use. For White females, working from 16 to 20 hours was associated with alcohol use, working from 21 to 30 hours was associated with binge drinking, and working from 26 to 30 hours was associated with marijuana and cocaine use.

**Veazie, M.A., and G.S. Smith. 2000. "Heavy Drinking, Alcohol Dependence, and Injuries at Work among Young Workers in the United States Labor Force." *Alcoholism, Clinical and Experimental Research* 24(12):1811-1819.**

To determine whether heavily drinking and alcohol-dependent workers are at higher risk of occupational injury, the authors analyzed the nationally representative cohort of people enrolled in the National Longitudinal Survey of Youth since 1979. This analysis was restricted to the 8,569 respondents in the 1989 annual interview (age 24-32) who were employed during the 6 months before the interview. We studied occupational injuries (excluding sprains or strains) reported within 6 months of the interview in 1989 (cross-sectional analysis) and 1990 (prospective analysis). Among current drinkers, significant twofold increases in the odds of injury for one or more episodes of heavy drinking were reduced to an odds ratio (OR) of 1.2 (95 percent confidence interval [CI] = 0.7, 2.1) in the cross-sectional analysis and an OR of 1.6 (CI 1.0, 2.8) in the prospective analysis after adjustment for confounding. No dose-response relationship with the frequency of heavy drinking was found. Alcohol-dependent respondents were not at higher risk of injury in the cross-sectional (OR = 1.1, CI 0.7, 1.8) or prospective (OR = 1.3, CI 0.8, 2.2) analyses after adjustment for confounding. For young U.S. workers, common occupational injuries (excluding sprains and strains) may not be strongly associated with alcohol dependence. Confounding by other risk factors may explain much of the association between being a heavy drinker and occupational injuries in this population.

**Walsh, D.C., R.E. Rudd, L. Biener, and T. Mangione. 1993. "Researching and Preventing Alcohol Problems at Work: Toward an Integrative Model." *American Journal of Health Promotion* 7(4):289-295.**

The authors propose a consolidated framework to highlight modifiable factors in work organizations that may contribute to alcohol-related problems. This research model serves to organize existing knowledge, highlight pathways for new research initiatives, and offer insights into the design of primary and secondary preventive strategies. Current research on problem drinking in the workplace either locates problems in individual drinkers or looks to the social environment to understand how drinking problems unfold. There is a clear need for a more complete theoretical model which incorporates social, cultural, organizational, and personal factors. This article elaborates on a model for examining problem drinking at work that integrates policy, normative, and psychosocial influences. It emphasizes the structures within which health-related decisions and actions are contained and constrained. The focus here on the connections between alcohol use and work builds on the premise that health is socially produced.

**Wegman, D.H., and L.K. Davis. 1999. "Protecting Youth at Work." *American Journal of Industrial Medicine* 36:579-583.**

The National Research Council's report "Protecting Youth at Work" addresses the health and safety consequences of work by youth in the United States. The report finds that a higher

proportion of U.S. youth work than in any other developed nation and that as much as 80 percent of youth will have worked during their high school years. The majority of adolescents are employed in the retail and service sectors. Positive aspects of this work include lessons in responsibility, punctuality, dealing with people, good money management, and gaining self-esteem, independence, and new skills. On the negative side, however, students who work long hours are less likely to advance as far in school as other students, are more likely to smoke cigarettes and use illegal drugs, be involved in other deviant behavior, may get insufficient sleep and exercise, and may spend less time with their family. Working youth appear to have injury rates (4.9 per 100 FTE) almost twice that of adult workers (2.8 per 100 FTE). There is evidence that each year over 200,000 youth experience work injuries and at least 70 die. The report includes an extensive list of recommendations to safeguard the health and well-being of young workers: improved government regulations as well as their enforcement, better data collection and analysis to provide essential information on the distribution and consequences of youth employment, education of key actors such as employers, parents, teachers, and the youth themselves, and research to fill critical knowledge gaps.

**Weinberg, N.Z., E. Rahdert, J.D. Colliver, and M.D. Glantz. 1998. "Adolescent Substance Abuse: A Review of the Past 10 Years." *Journal of the American Academy of Child & Adolescent Psychiatry* 37(3):252-261.**

This study reviews and synthesizes the recent scientific literature on adolescent substance abuse, covering natural history, epidemiology, etiology, comorbidity, assessment, treatment, and prevention, and highlights areas for future research. Studies of adolescent substance abuse are reviewed with the focus on substance abuse and dependence rather than substance use. There has been a sharp recent resurgence in adolescent drug use. Biological factors, including genetic and temperament characteristics, as well as family environment factors, are emerging as important etiological variables. Comorbidity with other psychiatric disorders, particularly with conduct disorder, is frequent and complicates treatment. New assessment instruments are available for clinical and research use. Among treatment modalities, family-based interventions have received the most study. The past decade has seen growth in the volume and sophistication of research on adolescent substance abuse and in the conceptualization of this problem. Further research is needed, particularly on the significance of comorbid conditions and on individualized and effective treatment approaches.

**Wells-Parker, E., and M. Williams. 2002. "Enhancing Effectiveness of Traditional Interventions with Drinking Drivers by Adding Brief Individual Intervention Components." *Journal of Studies on Alcohol* 63:655-664.**

The purpose of the research was to determine whether the effectiveness of a traditional DUI (Driving Under the Influence) group intervention program could be enhanced by the addition of two brief individual intervention sessions and a follow-up. The differential effectiveness of the individual intervention component was examined for four offender subgroups (young minorities, problem drinkers, women, and depressed offenders) that had been previously identified as at high risk or vulnerable. Adjudicated first DUI offenders (N = 4,074), of whom 776 (19 percent) were female, were randomly assigned to a standard first-offender program or an enhanced standard program that included two short individual sessions and a brief follow-up session. The setting was a mandated first-offender program in 10 Mississippi locations. Depressed offenders

who were assigned to the enhanced program were 35 percent less likely to recidivate than those assigned to the standard program. The effectiveness of the two programs did not differ significantly for offenders who self-reported low depression. No significant interaction effects were found between program type and age, minority status, or gender. After depressed mood was controlled for, problem-drinker status was not related to program effectiveness; however, problem drinkers had higher depression rates. Results suggest that the combination of a standard first-offender program with brief individual counseling can be effective for DUI offenders who report depressed mood and who are at high risk for recidivism. A five-item screen for sad/depressed mood from a widely used DUI risk assessment instrument identified offenders who benefited from the enhanced intervention.

**Wickizer, T.M., B. Kopjar, G. Franklin, and J. Joesch. 2004. "Do Drug-Free Workplace Programs Prevent Occupational Injuries? Evidence from Washington State." *Health Service Research* 39(1):91-110.**

This study evaluates the effect of a publicly sponsored drug-free workplace program on reducing the risk of occupational injuries, by examining workers' compensation claims data from the Washington State Department of Labor and Industries covering the period 1994 through 2000 and work-hours data reported by employers. The authors used a pre-post design with a nonequivalent comparison group to assess the impact of the intervention on injury risk, measured in terms of differences in injury incidence rates. Two hundred and sixty-one companies that enrolled in the drug-free workplace program during the latter half of 1996 were compared with approximately 20,500 nonintervention companies. The authors tested autoregressive, integrated moving-average (ARIMA) models to assess the robustness of our findings. The drug-free workplace intervention was associated ( $p < .05$ ) with a statistically significant decrease in injury rates for three industry groups: construction, manufacturing, and services. It was associated ( $p < .05$ ) with a reduction in the incidence rate of more serious injuries involving four or more days of lost work time for two industry groups: construction and services. The drug-free workplace program we studied was associated with a selective, industry-specific preventive effect. The strongest evidence of an intervention effect was for the construction industry. Estimated net cost savings for this industry were positive though small in magnitude.

**Williams, C.L., C.L. Perry, K. Farbakhsh, and S. Veblen-Mortenson. 1999. "Project Northland: Comprehensive Alcohol Use Prevention for Young Adolescents, Their Parents, Schools, Peers, and Communities." *Journal of Studies on Alcohol* (Suppl 13):112-124.**

Project Northland is a prevention trial with the objective of reducing underage drinking and related problems. Phase 1 focused on early adolescence, and this article describes the multiple interventions, highlighting its parent components. To conduct their study, the authors used a cohort design with sixth graders from 24 school districts, randomly assigned to intervention or reference condition. Phase 1 ended in eighth grade. Both demand and supply reduction guided the interventions. The authors examined Project Northland's impact using MMPI-A scales assessing clinical problems related to adolescents' alcohol and other drug (AOD) use, as well as MMPI-A scales related to school functioning and family functioning. Results showed significant reductions on the MMPI-A Proneness scale for those exposed to the interventions.

The greatest program effects were among baseline nonusers of alcohol. The results suggest that the impact of Project Northland is not only on specifically targeted alcohol and drug use behaviors and their predictive factors but also on intra-individual and familial factors generally considered precursors of more extensive problem behaviors and more resistant to change. Furthermore, the engaging home-based sixth-grade intervention, the Slick Tracy Home Team Program, is a promising population-based prevention approach that may generalize to other serious problems within a young person's family.

**Wodarski, J.S., and M.D. Feit. 1997. "Adolescent Preventive Health: A Social and Life Group Skills Paradigm." *Family Therapy* 24(3):191-208.**

The problematic behaviors of teenagers and the negative consequences are extensive and well documented: unwanted pregnancy, substance abuse, violent behavior, depression, and social and psychological consequences of unemployment. In this article, the authors define prevention and elucidate primary approaches. Skills an adolescent must master, such as social, cognitive, and academic, which should provide the focus for intervention from a life-span development perspective, are reviewed. Also, issues are raised that relate to implementation of group prevention strategies for adolescents, including cognitive aspects, social and family networks, and intervention components. The areas covered are adolescent development, sexuality education, psychoactive substance use, anger control, coping with depression and suicide, comprehensive employment preparation, and family intervention. The Life Skills Training approach is proposed as the treatment of choice. The paradigm has a rationale and elements in common with other prevention programs that are based on a public health orientation and comprise the essential components of health education, skills training, and practice in applying skills. The Teams-Games-Tournaments model comprises the same components except that peers are used as teachers. The research base of the social skills paradigm is reviewed and evaluated according to the topics presented.

**Workplace Substance Abuse Advisor. 2002. "Employers Urged to Target Younger Employees in Drug Prevention Efforts." *Workplace Substance Abuse Advisor* 17(3):1, 6.**

Given that most people between the ages of 18 and 49 who abuse substances are employed, the workplace is an ideal location for substance abuse prevention efforts. Workplace policies such as drug testing and employee assistance programs do influence behavior and can reduce substance use. The director of SAMHSA's Division of Workplace Programs calls for more early intervention programs, especially those that target employees aged 18 to 25, who have the highest rates of illicit substance use.

**Wu, L.T., W.E. Schlenger, and D.M. Galvin. 2003. "The Relationship between Employment and Substance Use among Students Aged 12 to 17." *Journal of Adolescent Health* 32(1):5-15.**

The authors examined the association between employment status and substance use among students aged 12 to 17 years. To do so, they conducted secondary analysis of data from the 1995 and 1996 National Household Surveys on Drug Abuse. The survey is a primary source of data on licit and illicit drug use among noninstitutionalized Americans aged 12 years or older. The authors found that about one in six adolescents reported both going to school and holding a

job. Approximately one-fourth of students smoked cigarettes, and one-third consumed alcohol in the past year. An estimated 1.6 percent of students were current heavy cigarette smokers, and 2.6 percent were current heavy alcohol users. One-year prevalence estimates of any illicit drug use and heavy illicit drug use were 16.7 percent and 1.8 percent, respectively. Among students employed full time, prevalence estimates increased to 9.7 percent for heavy cigarette smoking, 13.1 percent for heavy alcohol use, 38.1 percent for any illicit drug use, and 5.0 percent for heavy illicit drug use. Logistic regression analyses supported relatively high rates of cigarette use, alcohol use, illicit drug use, and heavy substance use among working students. Mental health problems, especially externalizing behavioral syndromes, were found to coexist with the use and heavy use of substances. The observed associations varied somewhat by gender. The authors concluded that the workplace may be an appropriate venue for establishing substance use prevention and early intervention programs focused on younger workers, including adolescents who work part time.

**Yamada, T., M. Kendix, and T. Yamada. 1996. "The Impact of Alcohol Consumption and Marijuana Use on High School Graduation." *Health Economics* 5(1):77-92.**

In this study the authors use data from the National Longitudinal Survey of Youth (NLSY) to estimate the relationship between high school graduation, and alcohol and marijuana use among high school students. The authors also estimate the demand determinants for each of these substances. The results show that there are significant adverse effects of alcohol and marijuana use on high school graduation. In particular, increases in the incidence of frequent drinking, liquor and wine consumption, and frequent marijuana use significantly reduce the probability of high school graduation. The results also show that beer taxes, liquor prices, and marijuana decriminalization have a significant impact on the demand for these substances. These findings have important policy implications. A 10 percent increase in beer taxes reduces alcohol consumption among high school students, which in turn raises the probability of high school graduation by about 3 percent. A 1 percent increase in liquor prices raises the probability of high school graduation by over 1 percent. Raising the minimum drinking age for liquor also reduces liquor consumption, and thus improves the probability of high school graduation. Although the relationship between marijuana decriminalization and marijuana use is not significant, decriminalization is found to reduce the probability of becoming a frequent drinker. This result suggests that marijuana use and frequent drinking are substitute activities. Illicit substance abuse reduces the rate of high school completion, reduces expected future earnings, and creates potential health problems. Thus, high-school-based preventive programs which discourage alcohol consumption and marijuana use are highly recommended to alleviate these problems.

**Yohalem, N., and K. Pittman. 2001. *Powerful Pathways: Framing Options and Opportunities for Vulnerable Youth*. Takoma Park, MD: The Forum for Youth Investment, International Youth Foundation.**

This report approaches the transitions that vulnerable youth undergo—from jail back to the community, from foster care to independent living, from high school to college—as opportunities to develop youth's skills and build their resiliency. Too often, fragmented support systems and isolated agencies become part of the problem. The authors assert that ill-served, vulnerable youth can transform their lives if support is delivered in a coordinated and comprehensive

manner and builds on youth's strengths (so-called wraparound services). These services are both available and cost-effective. This report discusses who vulnerable youth are, the obstacles they face, the integrated strategies that can help transform their lives, and the perceptions that must change in order for long-term change to take hold.

**Zarkin, G.A., J.W. Bray, G.T. Karuntzos, and B. Demilrap. 2001. "The Effect of an Enhanced Employee Assistance Program (EAP) Intervention on EAP Utilization." *Journal of Studies on Alcohol* (62(3):351-358.**

An enhanced employee assistance program (EAP) intervention was developed that delivers comprehensive EAP outreach services to all employees who may have alcohol-related and other workplace problems; standard EAP materials traditionally targeted at White men were enhanced to include women and minorities. This study evaluates whether the enhanced EAP intervention increased EAP utilization. The enhanced EAP intervention was developed at a large community-based not-for-profit EAP located in Rockford, Illinois. Two primary worksites and 16 other newly contracted worksites received the enhanced EAP intervention and served as intervention sites; the 107 other worksites serviced by the EAP were used as comparison sites. The authors used time series data from 1991 to 1998 and included repeated measures on each firm's quarterly EAP utilization. The enhanced EAP intervention increased the mean number of women and minority cases per worksite by 58 percent, White male cases by 45 percent, and total EAP cases by 53 percent. This study shows that, for a modest cost, the enhanced EAP intervention successfully increased utilization of EAP by all employees, especially utilization by women and minority employees. It also shows that traditional EAP services and outreach materials can be made more appealing to women and minorities without adversely affecting their utilization by White men.